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TELEVISION ADDICTION: A SURVEY

A Dissertation Presented

By

ROBIN NELL SMITH

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

February 1983

Psychology

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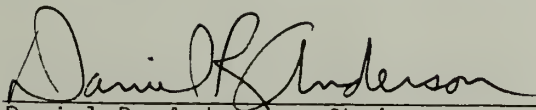
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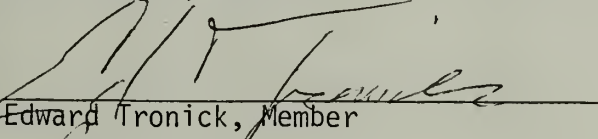
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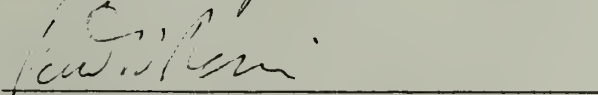
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Dedicated to my parents,
Jack Edward Smith, Jr.
and
Patricia Ann Smith

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ABSTRACT

Television Addiction: A Survey

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Despite assumptions about television addiction in the literature on television viewing, there have been no systematic attempts to document it. The present study was the first.

A review of theories on addiction processes concluded that the theoretical consensus on addiction permits the possibility of the existence of this phenomenon in TV viewing. Also, the theories point to the affective domain as an area in which to expect differences between TV addicts and normal viewers.

Both the scientific and popular conceptions of TV addiction were also reviewed. A content analysis of the popular literature provided specific guidelines for the operational definition of TV addiction used in this study.

A television viewing questionnaire which included a self-rating scale of items derived from descriptions of addicts in the popular literature, as well as many other measures, was administered by mail to a random sample of residents of Springfield, Massachusetts in the spring of 1982. The response rate was 65%.

The results of confirmatory factor analyses failed to support the hypothesis that TV addiction exists as it is described in the popular literature. None of the respondents scored at or above the criterion for the existence of the addiction factor in their responses. An alternative two-factor model was better able to account for the item covariances. Descriptive statistics on the addiction scale items indicate that most respondents feel that TV-addictive behavior is completely uncharacteristic of them. Yet, 65% agreed that "Television is addictive" and eleven respondents called themselves addicts. It was observed that the average number of hours reported in viewing time for this group was over double that of the entire sample. Future analyses of these data will test alternative conceptions of television addiction.

An attempt was made to account for the popularity of the notion of television as a "plug-in drug" in terms of (1) our sparse scientific knowledge about the nature of the viewing experience, and (2) an abiding fear or ambivalence in American culture about technology and its effects.

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CHAPTER I

INTRODUCTION

Rationale

The popular and professional literature on television viewing is replete with references to "addiction" to television. No systematic attempt has ever been made to determine whether TV addiction actually exists. The research described here represents the first attempt.

The notion that the television viewing experience can lead to addiction is consistent with the popular view of television as an "irresistable narcotic" (Winn, 1978, p. 12), a "plug-in drug." According to this perspective, the television viewing experience results in a changed state of consciousness, a "television trance" (Winn, 1978, p. 15). If television viewing induces such a state, then perhaps the achievement of this state can be addictive.

The absence of systematic research into the nature of the television viewing experience has left many of these popular assumptions unquestioned. Until recently, most research has been concerned with the effects of content, such as violence, on behavior and cognition. The effects of viewing per se have rarely been addressed by research in mass communications or in the psychological literature. At this point, the evidence for a television addiction syndrome is purely anecdotal. Yet the topic constitutes a widespread and growing portion of the popular literature on television.

Evidence for the existence of a television addiction syndrome would have important implications for psychologists working on theories of addiction processes and treatment (i.e., Solomon, 1980; Cummings, 1979). In addition, researchers in the field of mass communications are calling for studies on the effects of television on affective, in addition to cognitive, states (Blumler and Katz, 1974; Dorr, 1981). Results of research on television addiction should be directly relevant to these concerns, as well as to a theory of television viewing behavior.

Television Addiction in the Scientific Literature

The review that follows is organized around several persistent themes in the scientific literature on television addiction:

- (1) that TV addiction is a form of escape to a fantasy world that is pathological in nature
- (2) that TV addicts use television to reduce stress
- (3) that the personal relationships of TV addicts are disturbed
- (4) that middle-class viewers are more susceptible to TV addiction
- (5) that TV addicts become addicted because of television's sensory arousal potential.

These themes cut across two historical phases of television research. In the 1950's when television use became widespread, much concern was expressed about the effects of the viewing experience, including its potentially addictive power. Several classic studies (most

notably Himmelweit, Oppenheim, and Vince, 1958; and Schramm, Lyle, and Parker, 1961) addressed these issues, particularly the question of "displacement" of other activities such as reading and family interaction by television. While some observations by these investigators led them to posit the existence of a television addiction syndrome, there were no systematic attempts to define and study it. In the 1960's attention turned to the content of TV programs, especially violence, and the issue of addiction to the medium dropped out of the literature. The 1970's have seen a revival of interest in the issue of the effects of the medium per se, and an increase in the amount of discussion about television addiction. However, while our conceptual and methodological research tools are much more sophisticated than those of the early days of TV research, the level of discussion remains speculative and uninformed opinion abounds. At the same time, parents and educators are increasingly turning to behavioral scientists for answers to their questions about the potentially addictive effects of television. What follows is a review of what scientists have to offer at the present time.

1. Many mental health professionals have assumed that television addiction is "an avoidance pattern that interferes with mechanisms for problem-solving" (Barragan, 1976). For example, Meerlo (1954) reported a case of "television addiction and reactive apathy." In this report, the girl is said to have "become addicted to television and become unable, until treated, to distinguish between the world of television fantasy and the real world."

Another psychiatrist described the following case:

A 24-year-old musician, daughter of an adoring, constantly present, constantly acting mother, quarrels with her parents and gives up her own quite busy professional life. She turns to the television set, and soon is spending 10 or 12 hours a day watching it, constantly sitting before it, transfixed, drinking beer or eating ice cream, lost and desperate if the set is turned off. Making a joke one day, she said, "Boy, I don't know what I would do for a mother if that tube ever burned out." This girl, of real intellectual attainment, was completely indifferent as to what the programs actually were. (Glynn, 1956)

Children are represented in the following statement:

It is undoubtedly true that television addicts exist, and among children who are not psychologically disturbed in a serious way . . . The child who becomes addicted to the excitement of television is usually one who is not well-grounded in reality and not able to make a clear distinction between the real and fantasy world . . . The child who becomes addicted to the dream world of television is usually schizoid or suffering from very unsatisfactory personal relations, at home or with the peer group or both. (Schramm, Lyle, and Parker, 1961)

2. Several investigators have suggested that television addiction may be the result of overuse of television viewing as a stress reduction technique. Singer (1980) proposes that "if TV has a potential addictive power, it arises from the fact that it reduces negative affect by substituting somebody else's thoughts for your own thus minimizing painful private rehearsals of one's own problems." Zillman, Hezel, and Medoff (in press) provide evidence consistent with the notion that people select programs which hold the greatest promise of relief from negative affective states.

Television viewing is frequently mentioned as a coping mechanism for dealing with stress in everyday life (Schramm et al., 1961; Greenberg, 1974; Murray and Kippax, 1979). The statements of self-designated addicts also tend to emphasize the "escapist" function of television (see next section). Yet only one study has attempted to

examine the relationship between "escapist viewing" and stress. Pearlin (1959) found a significant relationship between them in a questionnaire study. However, his measures of both of these variables reflect the lack of methodological sophistication in the research on television in the 1950's. For example, stress was determined by answers to four questions indexing "aspiration frustration," "blind faith in people," and "feelings of despair." Today more comprehensive and standardized scales are available which measure stress as a function of life events found to predict onset of a wide range of disorders, from depression (Rahe, 1974) to drug dependence (Duncan, 1976). With an adequate definition of television addiction, it should be possible to directly investigate the role of stress in compulsive television viewing.

3. Investigators have also speculated that the television addict suffers from unsatisfactory personal relationships (Freedman, 1961; Schramm et al., 1961). Some evidence that this is true for heavy viewers is found in reports that heavy viewing in children is related to conflict with parents (Schramm et al., 1961) and difficulty in making friends (Himmelweit, Oppenheim, and Vince, 1958; Schramm and Roberts, 1971). Murray (1972) found that, among five- and six-year-old males in inner-city homes, very heavy viewers were most likely to have problems of social adjustment, to be interpersonally passive, less persistent, more shy.

It seems important at this point to clarify a distinction between amount of viewing and addiction to television. For some investigators, heavy viewing is synonymous with addiction to television. For

example, Himmelweit, Oppenheim, and Vince (1958) designated as "addicts" the one-third of each age group in their study which spent the longest time viewing. No estimates of the actual number of hours of viewing per week were reported for this group, although it was stated that on weekdays heavy viewers watched television for half the time available between the end of school and going to bed.

Given the complexity of the descriptions of TV addiction (see next section), it is likely that this is too simplistic a definition. In addition, people may be addicted but actually watch a relatively "normal" amount of television due to constraints on their time. (See Appendix A for a description of a self-designated TV addict whose actual viewing time is restricted by his working hours.) In fact, in the study cited above, Himmelweit et al. intensively interviewed a small sample of the subjects and found one or two who were heavy viewers because they had just moved into a new neighborhood and had not up till then made friends. One or two others felt they did not have enough outlets for their energy. Heavy viewing per se may be a consequence of lack of behavioral options in the environment and not necessarily a good indicator of television addiction.

4. The "social class" hypothesis is based on some evidence for the operation of a "middle-class taboo" against television viewing. For example, Edgar (1977) surveyed 298 Australian families who never owned a television set or who had gotten rid of it. He found that this group was characterized by a higher socioeconomic status and educational level than the general population. The chief reasons cited for not owning a television were that "it is addictive" and that

television constituted a threat to family life.

Geiger and Sokol (1959) speculated that since behavior "involving gratification but subject to cultural taboos is likely to lead to addiction," television addicts would be found predominantly among middle-class persons who were constant viewers. Other investigators have suggested that the appeal of "forbidden fruit" may contribute to television addiction (Schramm et al., 1961). For example, Shapiro (1965) describes one patient who maintained that "he must avoid watching any television since he might enjoy it, want to watch more, become addicted to it, and want to do nothing else and then, what would become of the book he was writing?"

5. Another notion frequently encountered in the scientific literature might be called the "arousal" hypothesis. Zuckerman (1979) speculated that although television provides little in the way of novel sensation, "the television addict might be called a stimulation seeker." Maccoby (1951) reasoned that television addiction might result when a person "becomes accustomed to a heightened level of excitement and organizes much of his learned excitement at that particular level" so that "his behavior will be disrupted if the level of excitement declines, and he will be restless, bored, ill-at-ease" until he resumes the activity. In other words, the sensory arousal potential of television leads the viewer to seek more and more stimulation until a dependence, and addiction, results.

In summary, there are many untested assumptions about television addiction in the psychological literature. Given the extent of popular concern, psychologists have a responsibility to base their

conclusions about television addiction on sound scientific evidence, which does not exist.

Defining TV Addiction

Logically, the first step in a scientific investigation of this phenomenon would be to derive a definition of what to look for--to define television addiction. Scientists concerned with addiction processes in general have pointed out the necessity that addiction be "first of all specifically and carefully defined so that we know what we are talking about and what is excluded from the definition" (Lindesmith, 1966). An adequate definition of TV addiction would enable scientists to develop criteria that would separate addicts from heavy viewers or any other group.

For example, in an extensive questionnaire study of the members of Alcoholics Anonymous, Jellinek (1952) found that a perceived "loss of control" by the drinker discriminated between two categories of drinkers: (1) "habitual symptomatic excessive drinkers" and (2) alcohol addicts. Also, Zinberg and Jacobson (1974) distinguished controlled drug users from addicts in a group of physicians and suggested that the extent and diversity of the person's social relationships are crucial in determining whether the person becomes a controlled or compulsive user. Such discriminational criteria might also be developed for TV addiction.

At this point, a definition of television addiction which can be translated into research on the issue does not exist in the scientific literature on the topic. Therefore, a generally accepted

theoretical notion of addiction processes which could be applied to the case of television in particular would be useful.

Addiction Theory

Addiction is a difficult scientific concept. In much of the scientific literature, the term is either "used while ignoring the data which have been accumulated about drug dependence or is rejected as unusable on the basis of these data" (Peele, 1977). In fact, the World Health Organization Expert Committee on Addiction-Producing Drugs decided in 1964 to discontinue use of the term "drug addiction" in favor of "drug dependence" and changed its own name accordingly. Some of the thinking underlying this change was made clear in 1968 by W. D. M. Paton, chairman of a colloquium of leading authorities on all areas of drug research. He summarized their conclusions in a report entitled Scientific Basis of Drug Dependence (Steinberg, 1969). First of all, the participants affirmed their rejection of the term "addiction," with its connotations of a withdrawal syndrome and the development of "tolerance." They concluded that the evidence from both animal and human research showed that strong dependence could exist with little or no evidence of the "classical withdrawal syndrome." The working definition of drug dependence endorsed by the committee was: "as a result of giving a drug, forces--physiological, biochemical, social or environmental--are set up which predispose to continued drug use." With the elimination of the withdrawal syndrome as the criterion, the central issue of drug dependence was acknowledged to lie in the nature of the primary "reward" provided by the drug. Finally, the

committee called for less exclusive concentration on the opiates in scientific investigations and more recognition of the role of social and cultural factors in drug dependence.

The notions that addiction is not a purely physiological phenomenon and that narcotics are not the sole source of addiction now seem to be widely accepted. In fact, most theoretical efforts now focus on the dominance of the psychological processes in drug dependence. Addiction is often seen as a primarily psychological phenomenon, "a constellation of behaviors that constitute a way of life" (Cummings, 1979). The nature of the primary reward provided by the drug is most often conceived of as a "mental state." The following statement by a group of "physiologically-oriented" theoreticians makes this clear.

All of these drugs have one effect in common: they are capable of creating, in certain individuals, a particular state of mind that is termed psychic dependence. In this situation, there is a feeling of satisfaction and a psychic drive that require periodic or continuous administration of the drug to produce pleasure or to avoid discomfort. Indeed, this mental state is the most powerful of all the factors involved in chronic intoxication with psychotropic drugs, and with certain types of drugs it may be the only factor involved, even in the case of the most intense craving and perpetuation of compulsive abuse . . . Physical dependence is a powerful factor in reinforcing the influence of psychic dependence . . . (Eddy, Halbach, Isbell, and Seevers, 1965)

Some of the evidence which has led to the current theoretical emphasis on psychological vs. physiological processes is described below. The primary source of difficulty to the theoretician has been the wide variation in the occurrence of withdrawal and drug tolerance revealed in the following studies. In each case, many more anecdotal reports exist in the literature but only systematic empirical investigations are cited here.

Temporary users.

1. Vietnam veterans

In follow-up studies of soldiers who had positive traces of a narcotic in their urine when they left Vietnam, 75% of the men said they were addicted in Vietnam. Of these, a third continued to use a narcotic (usually heroin) in the U.S., yet less than 10% were found by the researchers to be drug dependent at home (Robins, Davis and Goodwin, 1974). The researchers concluded that occasional use of narcotics without becoming addicted is possible even for those who previously have been addicted.

2. Hospital patients

Norman Zinberg (1974) interviewed 100 hospital patients who knowingly received morphine regularly at higher than street-level doses for at least ten days. Only one experienced any withdrawal symptoms.

3. Infants

Data presented at a National Institute on Drug Abuse conference on perinatal addiction (Harbison, 1975) indicates that in 75% to 90% of children born to heroin-addicted mothers, withdrawal either does not appear or is difficult to detect. While these infants often do exhibit physical problems, these problems often persist or reappear, indicating that they may be the result of related problems such as the mothers' malnutrition or venereal disease, which are common among street addicts, or permanent organic damage due to the effects of heroin itself or the accumulated impact of several drugs (Desmond and Wilson, 1975).

4. Animals

Alexander, Coombs, and Hadaway (1978) found that rats which are habituated to morphine in a water solution continue to self-administer it when isolated, but reject it (by choosing pure water) when placed in a stimulating environment with other rats.

Controlled users. Controlled use is common with alcohol, nicotine, caffeine, marijuana, and sometimes cocaine. There are also people who regularly use opiates without becoming addicts. Doctors are the best-known single group. Charles Winick (1961) interviewed doctors who had been self-administering morphine or the synthetic opiate Demerol and found that only two of the ninety-eight doctors questioned found they needed increasing doses of the narcotic. In addition, he found that nearly all had been competently carrying out their practices while using these drugs and most were considered more successful than average. They were exposed not because they lost control, but because nurses reported their drug use or federal agents investigated their prescription records.

Jacobson and Zinberg (1975) showed that there are significant numbers of controlled or intermittent heroin users, known as "chippers" among other groups, such as students. Also, many people in urban ghettos use heroin either periodically or regularly while getting an education, holding jobs, etc. Lukoff and Brook (1974) found that they made up the majority of users in a Brooklyn ghetto.

Contextual factors in drug effects. Research conducted by Isidor Chein and his coworkers in New York in the 1960's (reported in the classic book The Road to H) found that street addicts experienced withdrawal even when the heroin content of their injections was so small as to have almost no chemical impact. He also noted that not all teenagers he studied who were exposed to heroin became addicts, or even occasional users.

Zinberg and Lewis (1964) noted that, in their investigation of 200 narcotic users, some seemed to be addicted to the injection ritual rather than the drug itself. In pioneering research with morphine addicts, Light and Torrance (1929) observed that addicts commonly pricked each other's skin with a needle to obtain relief from withdrawal.

Jarvik (1973) found that habitual smokers, who presumably are addicted to nicotine, respond more to nicotine inhaled while smoking than to nicotine introduced through oral doses or by injection.

Phenomenon of "maturing out". Winick (1962) established the phenomenon of "maturing out" by examining the lists of addicts' names compiled by the Federal Bureau of Narcotics. By comparing lists at 5-year intervals, he found that one-fourth of all known addicts became inactive by the age of 26, three-fourths by 36. He concluded that heroin addiction is largely an adolescent habit, which most addicts eventually "out-grow."

Placebo effects. The classic study was done by Lasagna, Mosteller, von Felsinger and Beecher in 1954. They employed a double-blind procedure to determine differences in pain relief of post-operative patients with morphine and a placebo. Thirty to forty percent of the patients obtained as much relief with the placebo as with the morphine. Those who accepted the placebo were also more regularly relieved of pain by the morphine. However, the morphine was effective only sixty to eighty percent of the time.

Cross-dependency. Alcohol and barbiturates are the best-known of the cross-dependencies--that is, each suppresses the withdrawal symptoms in a person who is addicted to the other. O'Donnell (1969) found that when narcotics were outlawed in Kentucky, many addicts became alcoholics. Also, when World War II resulted in a shortage of available heroin, addicts turned to barbiturates. This interchangeability is claimed to "argue most tellingly against the idea that some particular molecular binding explains addiction" (Peele, 1977).

Social and cultural variations in effects. Schacter and Singer (1962) demonstrated the effects of expectations on reactions to a drug. They injected subjects with the stimulant epinephrine (adrenalin). Half the subjects were not told what effects to expect and half were. In addition, half of each group were left in a room with a person who acted euphoric, half with one who acted angry. Those who were not told what to expect picked up the mood of the person they were left with, while informed subjects did not.

In the 1950's Howard Becker described how social learning effects occur naturally in the initiation of novice marijuana smokers by experienced smokers. He found that they learn how to react to it--and to enjoy certain sensations--from group members who taught them (Becker, 1963).

Zinberg has documented similar effects in army units and Daytop Village residents. With heroin, he reported that army units in Vietnam each developed their own specific withdrawal symptoms, which were similar within a unit, but varied widely between units (Zinberg, 1971). In addition, he reported that withdrawal symptoms were consistently milder at the Daytop Village treatment center than for the same addicts in jail (Zinberg and Robertson, 1972).

Search for the elusive "non-addicting" analgesic. When heroin was first marketed by the German Bayer company in 1898, it was claimed to be a non-addicting alternative to morphine. From 1929 to 1941, the National Research Council's Committee on Drug Addiction had a mandate to discover a non-addictive analgesic to replace heroin. Every drug which appeared during this time turned out to be subject to abuse. The process was repeated for sedatives and tranquilizers such as Quaalude and Valium. Peele (1979) had predicted that those researchers who are now attempting to synthesize endogenous opiates and who expect the result to be non-addictive may have to "relearn the lessons of history."

In sum, researchers have been unable to link addiction with any one drug or class of drugs. Rather, the literature supports a dynamic psychological view of a "complex individual system interacting with

personal history and environmental factors to yield an addiction" (Nathan and Lansky, 1978). However, there do not seem to be characteristic personality patterns that differentiate drug abusers from non-abusers. While earlier studies claimed to find personality characteristics that were particular to addicts, these studies were plagued with methodological problems (reviewed by Gendreau and Gendreau, 1971 and Nathan and Lansky, 1978) and/or circular reasoning. A particularly common methodological problem is the lack of control groups or inappropriate comparison groups. The circular reasoning employed by the theoreticians in this field is described by Zinberg (1975):

The idea that certain personality types seek out drug experience because of a specific, early, unresolved developmental conflict, and that such people predominate in the addict group or in the much larger group of controlled users, is based on retrospective falsification. That is, looking at drug users and especially addicts, after they have become preoccupied with their drug experience, authorities assume that these attitudes and this personality state are similar to those the user had before the drug experience, and thus led to it. Then "evidence" from the user's developmental history and previous object relationships is marshalled to show that the addicted state was the end point of a long-term personality process.

Recent results reported by Vaillant and Milofsky (1982) from a prospective study of the etiological factors in alcoholism support this viewpoint. While most theorists are suspicious of the notion of the "addiction-prone" personality, it is recognized that psychological factors are involved in the decision to use drugs, the effects of those drugs, the course of the dependency, and the efficacy of different treatment methods. Briefly reviewed below are three recent theories of addiction processes which might be regarded as "new directions" in the thinking in this field. They represent psychoanalytic, physiological,

and behaviorist perspectives.

In his classic essay entitled "Addiction and Ego Function" Zinberg (1975) described ways in which the social condition of the addict has an impact on ego function. His treatment-oriented theory is grounded in post-Freudian, ego-adaptive school of psychoanalysis. He claims that the relative autonomy of the addict's ego from both id (instinctual drives) and forces in the external environment is impaired. This results when addicts lose "varied sources of stimulus nutriment." That is, they are alienated from family and friends and declared deviant by society. The social input available to them is either a negative view of themselves or the "ceaseless patter [about drugs] of their compulsive drug-using groups." Simultaneously, their drives are at peak tension due to their desire for gratification from the drug.

Following Rapaport's formulations, under these conditions a regressive state develops such that the ego-id barriers become fluid. Primary process thinking and primitive defenses become evident and the sense of voluntary control over one's actions disappears. As a result, the ego must modify its structures to conform to this new, more restricted and primitive pattern. At the same time, Zinberg says, "It is my clinical impression that the addict's ego fights to retain whatever level of ego functioning can be saved." The far-reaching implications of this struggle for the therapeutic relationship are described in his essay. Briefly, Zinberg warns against a tendency to focus on motivations and unconscious conflicts which could have led to dependency. He believes that effective therapy requires an awareness of the crucial role of the social setting in the current ego-state of the addict. The

relevance of Zinberg's theory to television addiction will be commented upon later in this section.

Some fascinating new theoretical developments have emerged from research on the endogenous opioids. Recently, opiate receptors have been discovered along the principal routes of pain stimuli in the brain and spinal cord. In addition, opiate receptors have been found in areas associated with emotional responses and hormone control as well as the amygdala and hippocampus areas thought to be involved in reward systems and memory. This is of special interest in light of the evidence that cocaine, amphetamines, nicotine, barbiturates, ethyl alcohol and the opiates all serve as reinforcers for operant behavior in monkeys (Meyer, 1974). This was demonstrated using the self-administration paradigm initially developed by Weeks (1962). Once these receptors were found to exist in all vertebrates and no invertebrates, it seemed clear to the small number of investigators in the field that these receptors probably evolved to interact with some endogenous opioids. Goldstein (1976), Synder (1977), and others discovered the existence of endorphins--morphinelike peptides produced by the body which act on these sites in the same way as morphine. Charting of these endogenous opiates has proceeded very rapidly, due in large part to the development of the radioimmunoassay technique (for which Rosalyn Yalow was awarded the Nobel Prize).

Although the endorphins have not yet been implicated in addiction processes, it has been suggested that a defect in the endorphin system may play a role in explaining why some individuals are more vulnerable to drug addiction than others (Goldstein, 1981). A second

possibility is that addiction may result from suppression or impairment of the endogenous system due to the habitual use of exogenous opiates.

Yet a third and possibly more likely role has been suggested. Goldstein (1981) cites evidence linking insensitivity to pain with overproduction of endorphins. It is possible that such differences in psychophysiological responsitivity may help to account for vulnerability to addiction. Consistent with this is evidence reported by Martin and Inglis (1965) that pain thresholds for addicts were lower than those for non-addicts.

Finally, a very promising theory of addiction processes has been offered within the context of a general theory of motivation. Solomon and Corbit (1974) use addiction as an empirical model for all acquired motivation. Their "opponent-process" theory of motivation implies that addiction is "the inevitable consequence of a normally functioning system which opposes affective or hedonic states." In addition, addiction is seen as a possible consequence of any repeated pleasure. Since this theory seems to be potentially the most useful one for understanding television addiction, a more extensive description of it follows. The primary source of the information below is their 1974 Psychological Review paper, which is their major theoretical statement. More recent empirical tests are discussed in Solomon (1980).

The theory assumes the existence of central nervous system mechanisms which operate to reduce the intensity of many affective states. The intensity reduction is accomplished by "opponent processes" which are automatically recruited when either a pleasurable

or aversive stimulus results in an affective reaction. These opponent processes are strengthened by use and weakened by disuse. Furthermore, it is assumed that the establishment of some types of acquired motivation (through the exercise of these processes) does not depend on conditioning and is not associative in nature. In order to appreciate their explanation of the behavioral phenomenon of addiction and the ability of the theory to account for many of the phenomena described above, it is necessary to outline (1) their description of the "standard pattern of affective dynamics"; (2) their theoretical model for its underlying mechanisms; (3) the implications of the "use postulate"; and (4) the conditionability of the opponent processes.

1. Two examples of the types of empirical observations from which Solomon and Corbit deduced the "standard pattern of affective dynamics" are described; one in which the initial stimulus is aversive, the other in which it is pleasant.

The first example is taken from Epstein's (1967) observations of the behavior of parachutists during and after a jump. Novice parachutists are often terrified during the jump, judging from photographs of their facial expressions and records of their autonomic responses. Upon landing, they are stunned for a short time and then gradually regain composure. Expert parachutists are no longer terrified but may be somewhat anxious during the jump. Afterward, they feel elated and the mood sometimes lasts for hours. In both cases, two different states are observable. The sequence is labeled: baseline \rightarrow A \rightarrow B \rightarrow baseline.

The second example represents opiate use. (Here Solomon and Corbit cite two old and somewhat obscure studies. Unfortunately, they

rely very heavily on anecdotal evidence for affective states in drug use and limit their theory to affective state only, without discussion of possible manifestations in and interaction with overt behavior). Here the sequence begins with the "rush" (A) directly after injection, followed by less intense euphoria. Then the B state takes hold, which they describe as "aversive, painful, and frightening somatic withdrawal symptoms, together with a feeling of craving." This state may last a long time before a return to baseline.

After repeated doses, state A (now A') weakens while state B (now B') intensifies and lengthens. Solomon and Corbin state:

We can easily describe opiate, alcohol, barbiturate, amphetamine or cigarette addiction within the empirical framework of analysis we have proposed. They all have four attributes: (a) The B' state lasts a long time; (b) the B' state is intensely aversive; (c) the elicitation of state A or A' is effective in causing immediate removal of state B or B'; and (d) the user learns to employ the drug which elicits states A and A' in order to get rid of state B or B'.

2. The theoretical model for the underlying mechanisms of this pattern has three components: (1) the a process which is aroused when a signal from the cognitive-perceptual system enters the affective system. (2) A signal from the a process then activates a b process, or opponent process, which has a hedonic quality opposite to that of process a. (3) The third component is a summing device which calculates $|a-b|$ and generates as its output the affective signal. The sequence generated is thus that of a peak primary reaction A, adaptation and steady-level, after-reaction B and decay of B.

The b process is a slave process; it is activated through the generation of the a process, although it is subject to Pavlovian

conditioning procedures.

3. The use postulate is that the opponent (b) process is strengthened through use and weakened through disuse, but the a process is not seriously affected. As a consequence, the resultant pattern of affective dynamics changes so that the A state is experienced as less intense, and B becomes stronger and longer lasting. (The model does not yet deal with qualitative changes in A and A', and B and B', although such changes are acknowledged).

Therefore, it is claimed that any significant departure from affective neutrality has "costs" in increased potentiality for pleasure or displeasure. The cost is not only psychological, but also physiological, in that activation of these processes results in increased autonomic and CNS activity. Following Selye's argument, a constant demand on an opponent-process system may result in diseases of adaptation for both pleasurable and aversive stimulation. There are clear implications for theories of psychosomatic disease in this model.

Finally, Solomon (1980) has recently suggested that, in some cases, endorphins may be the physiological substrate of a b process, and the sum $|a-b|$ may equal the endorphin amount secreted when aversive stimulation occurs. Their presence may account for the development of affective "tolerance" for certain initially aversive events, such as thrill-seeking behavior.

4. There is an interesting assymetry in this model between systems for pleasant and unpleasant B states. Unpleasant B states may function as drives that energize operant behaviors to reduce it (by seeking more drugs, for example). But pleasant B states serve as

positive reinforcers for a behavior such as sky diving which has an initially low probability of occurring. Therefore, some outside influence (i.e., peer pressure) is required initially. After many exposures, however, the aversive A state weakens and the B state strengthens.

Both A and B states can be conditioned to appear at the onset of previously neutral stimuli as a consequence of paired experience. The conditioned stimuli (CS_A and CS_B) then evoke their respective states as conditioned responses. The temporal dynamics of the conditioned responses should vary, however. Since the b process is a slave process, it should be possible to arouse it directly by the onset of a CS_B . At the termination, however, state B dies away--a monophasic recovery. Onset of a CS_A should result in the usual biphasic pattern of recovery with the conditioned state A followed by state B and then a return to baseline. Solomon and Corbit (1974) present supporting data from avoidance learning studies with animals.

In drug addiction, conditionability of A and B states may account for such phenomena as the variation with environmental context in intensity of withdrawal symptoms and placebo effects in relief of such symptoms. Solomon and Corbit reason that a needle prick or a room full of satisfied addicts should function as CS_A 's which would oppose the B state. Likewise, CS_B events (such as being in jail) should augment the B state and produce more intense craving. This conditioning process overdetermines craving and results in an addict being "hemmed in," that is, craving is a consequence of both CS_A and CS_B . It is understandable that the addict experiences feelings of loss of control and a deterioration of ego function.

In sum, the current theoretical consensus on addiction is that it is primarily a psychological phenomenon, with a possible physiological substrate in the endorphin system. There are no clearly specified physiological or biochemical mechanisms that mediate addiction processes and there seems to be no limit to the number of potentially addictive substances and experiences. The nature of the reward in addiction is thought to be the achievement of a pleasurable (or non-aversive) affective state. Finally, variations in environmental and sociocultural factors are thought to play a major role in determining vulnerability to addiction, choice of substance or experience, and mode of expression in behavior.

Relevance of Addiction Theory to Television Viewing

With regard to television viewing, it is clear that the theoretical consensus allows for the possibility of the television viewing experience to develop into an addiction. Solomon, in particular, explicitly attempts to generalize his model of addiction to a variety of pleasurable experiences, from love and attachment to thrill-seeking behavior. In his theory, there are no limitations on the types of experience which could lead to addiction; he regards this as an empirical question. In terms of guidelines for a theory of addiction to television, the theories described above point to the affective domain as an area of behavior in which to expect differences between addicts and non-addicts, particularly with regard to (1) affective state during and after viewing; (2) feelings of control over viewing behavior; and (3) feelings about one's social relationships and role in society.

Zinberg's theory leads to only very general predictions about the affective state of the addict--namely that addicts will feel alienated from family, friends, and society and will feel out of control of their viewing behavior due to a deterioration in ego function. Solomon's theory would predict that, if television viewing is a potentially addictive experience, an A state attained while viewing (the quality of which is an empirical question) should be followed by an opposite B state after viewing in those who are vulnerable to addiction. With repeated exposure, the A state will lessen in intensity and the B state will strengthen. If the B' state is unpleasant (which is a reasonable assumption given that television viewing is probably not an initially aversive experience), it will drive operant behavior, such as turning on the television, to reduce it. Finally, if the A' and B' states become conditioned, addicts should feel "hemmed in" and out of control of their viewing behavior.

There is some evidence that the affective states described above are characteristic of television addicts. An analysis of the popular literature on television addiction lends support to the notion that addiction processes may be determining the television viewing behavior of some people.

The Popular Literature on Television Addiction

In order to discover the particular manifestations in viewing behavior that an addiction to television would cause, a content analysis of the popular literature was undertaken and is reported below. The use of popular literature on behavior for psychological research is often overlooked as a rich source of hypotheses about behavior. The popular literature on TV addiction contains descriptions of addictive behavior by self-designated addicts and by their families.

A literature search was undertaken to gather references to television addiction in the popular literature of the past five years. The 1975-1979 issues of the Reader's Guide to Periodical Literature were consulted for articles on television addiction and closely related topics. In addition, several recent popular books (e.g., The Plug-In Drug, Four Arguments for the Elimination of Television) yielded many more descriptions. Finally, current newspaper and magazine articles contributed to the analysis.

Inspection of these statements suggested twelve categories of statements about television addiction, presented and illustrated below:

1. Television functions as a sedative.

"Another symptom of TV dependency is using it to obliterate pain, tension, or anxiety." (Brown, 1980)

"I confess to worrying for a while that my son was turning into a TV addict. He was using the tube to ease himself out of a mild depression." (Harrison, 1982)

2. Addiction doesn't bring satisfaction.

"I remember binging on television when I was a child and having that vapid feeling after watching hours of TV . . . it just didn't give back a real feeling of pleasure. It was like no orgasm, no catharsis, very frustrating. (quoted in Winn, 1978)

The television addict "can never be sated with his television experiences--they do not provide the true nourishment that satiation requires--and thus he finds he cannot stop watching." (Winn, 1978)

3. There is an absence of selectivity.

"True TV junkies are spiked on whatever flits across the hertz line and they don't even read TV Guide." (Brown, 1980)

"I watch TV the way an alcoholic drinks. If I come home and sit in front of the TV, I'll watch any program at all, even if there's nothing on that especially appeals to me." (quoted in Winn, 1978)

4. Addicts feel a loss of control over their viewing.

"I can't turn it off. I feel sapped, will-less, enervated." (quoted in Winn, 1978)

"As I reach to turn off the set, the strength goes out of my arms. So I sit there for hours and hours. (quoted in Winn, 1978)

5. Addicts lose a sense of time passing.

"The next thing I know it's eleven o'clock and I'm watching the Johnny Carson show, and I'll realize I've spent the whole evening watching TV! What's more, I can't stand Johnny Carson! But I'll sit there watching him. I'm addicted to TV." (quoted in Winn, 1978)

6. Television provides meaning and purpose in their lives

In Bullet Park, novelist John Cheever created an episode in which the alcoholic father of a nine-year-old TV addict destroys the TV set. "At the thought of how barren, painful, and meaningless the hours after school would be, the boy began to cry." (Cheever, 1967)

For soap opera addicts, "soap operas seem to comprise the reality which dominates their lives." (Winsey, 1979)

7. Their time is structured around the TV set.

"You're also in trouble, say former TV freaks, when TV competes with more important involvements--compulsive soap-opera watching keeps you off your job, a rigid nighttime viewing schedule takes the place of sex, hobbies, or social life." (Brown, 1980)

For TV addicts, "everyday activities are rigidly structured around the TV set." (Winsey, 1979)

8. They feel they watch too much TV.

"The self-confessed television addict often feels he 'ought' to do other things." (Winn, 1978)

9. They feel angry with themselves for giving in to its effects.

"All the while we were watching I'd feel terribly angry at myself for wasting all that time watching junk." (quoted in Winn, 1978)

"I'm not happy about the addiction. I'll sit there getting madder and madder at myself for watching, but still I'll sit there." (quoted in Winn, 1978)

10. They can't wait to get back to TV when they've been away.

"The first thing they do the minute they walk in the house is turn on the TV set. It's like a friend." (quoted in Windell, 1981)

"Television promised so much richness I could hardly wait for it." (quoted in Winn, 1978)

11. They try to quit and fail.

"And I'm embarrassed to admit that after only two weeks of 'cold turkey,' I found myself standing on Fifth Avenue with my nose pressed up against the Sony showroom window. I needed to shoot up." (English, 1977)

"Sneaking and peeking became a game for us. I would wait until Bryan was playing outside. Then I would sneak to the set to find out what was happening to my soap-opera friends. Often Bryan would catch me with the set on. I would flick it off quietly, like a child with her hand caught in a cookie jar." (Tannehill, 1979)

12. They experience withdrawal symptoms when they try to quit.

"I was very restless. I discovered that television had acted as a tranquilizer. Without it, I had to work to overcome my nervousness." (Tannehill, 1979)

A mother describes her eight-year-old son's behavior when deprived of television: "He was fidgety and nervous. He'd crawl all over the furniture . . . I said to my husband, 'He's having withdrawal symptoms' and I really think that's what it was." (quoted in Winn, 1978)

A look at the popular literature provides more specific information on the quality of the affective dynamics that might be found in television addiction. For example, addicts say they feel sedated and lose awareness of time passing, or feel angry while watching television. After viewing, there is a vapid feeling or feelings of guilt and restlessness. In addition, they clearly report feeling out of control of their viewing behavior. Finally, there are also indications of specific overt behaviors that is characteristic of television addiction, such as turning it on as soon as they get home, trying to quit and failing, etc. These statements are clearly consistent with the predictions that are derived from addiction theory and go beyond such predictions by providing information about the specific overt behavior and quality of feelings in television addiction.

It seems likely that, if television addiction is a real process, the behaviors listed above should be related so as to constitute a "syndrome." An operational definition of television addiction for the purposes of research would consist of the covariation of items measuring each of the behaviors listed above. If these items are tapping into the same construct--television addiction--it should be possible to find a new variable or factor which would account for most of

the variance in the item correlation matrix.

A test of this model would constitute one approach to the question. That is, television addiction could be conceived of as a general process like intelligence such that individual scores reflect both error variance and a true score on that variable. By contrast, another approach looks for individual consistencies in the operation of psychological processes. It is assumed that a particular process may not be a general one, but would be operating in a subset of the population.

The second research strategy to the question of television addiction would be to determine whether such a variable might describe the viewing behavior and affect of a subset of a population. The present study represents an attempt to combine both of these approaches to the question of whether television addiction exists as it has been described.

The most direct method would be to ask people to rate their own behavior on the addiction dimensions described above, and to examine these responses to determine whether an addiction factor is characteristic of all subjects' responses or whether it describes the behavior of only a small though significant number. The present study takes such an approach.

CHAPTER II

METHOD

In this chapter, the questionnaire design, survey administration, and response rate will be described. In addition, the specific hypotheses will be set forth and a discussion of the demographic characteristics of the respondents will be included.

Questionnaire Design

The questionnaire written for this study contains seven parts. The first three sections (A, B, and C) contain items about television viewing, including items which were written to assess television addiction. The fourth section (D) assesses demographic characteristics (i.e., age, sex, income, etc.) of the respondents. Section E contains a scale which measures stress due to life events, and several items which measure "sociability" and happiness. Finally, section F contains an activity scale and section G a values scale. A copy of the questionnaire is included in Appendix B.

The central issue of this study is the existence of the television addiction syndrome, either as a general "trait" or as a process which operates in a subset of the population. Therefore, the items which were written to address this issue will be described first. All other items in the questionnaire were included primarily for the purpose of assessing the characteristics of television addicts, should

they be found. (The demographic items also served the important purpose of describing the respondents in general.) In some cases, there were clear expectations based on the literature reviewed in Chapter I about the direction of the relationship between television addiction and other variables (e.g., stress); in other cases (e.g., values) there were no clear expectations. The variables and hypotheses are described below.

The addiction scale consists of the 27 items in section B of the questionnaire. The two questions between items 10 and 11 were included at that point to reduce the tendency toward a response set. (It will become evident in the results that no such tendency was observed.) Eighteen of these 27 items were derived from statements on television addiction in the popular literature (1-5, 9-11, 13-18, 24-27). These will be referred to as the addict items. The remaining nine items assessed behavior that was not described in the literature and therefore not thought to be particularly characteristic of television addicts. They include items that might describe either "normal" habits (I forget to watch a TV show that I want to see) or deviance of another sort (I have fears of losing control or going crazy). There were no specific hypothesized relationships between these items and the addict items. The eighteen addict items and their associated categories are listed below.

1. When I come home from work, school, or shopping, I turn on the TV within five minutes. (10)
2. When I'm watching TV at night, I go to bed later than I plan to. (7)
3. I'll watch anything that's on TV. (3)

4. I feel nervous after watching TV. (2)
5. I feel guilty about how much TV I watch. (8)
9. I feel depressed after watching TV. (1)
10. I cancel other plans in order to watch TV. (7)
11. While I'm watching TV, I feel angry at myself for watching TV. (9)
13. I have decided to give up TV for periods of time. (11)
14. I lose track of the time while I'm watching TV. (5)
15. I feel guilty when someone else sees me watching TV. (11)
16. I feel depressed when I can't watch TV. (6)
17. I can't think of anything to do on the weekends and holidays. (6)
18. I sneak peeks at the TV when no one is around. (11)
24. I feel nervous when I can't watch TV. (12)
25. When I'm watching TV, I feel like I can't stop. (4)
26. After an evening of TV, I forget what I have watched. (5)
27. I can't walk away from the TV once it is on. (4)

Respondents were asked to rate their own behavior on these items on a five-point scale from 0 (never) to 4 (always). It was hypothesized that, if television addiction exists as a general syndrome, responses to these items should covary such that a factor analysis would reveal the existence of a general factor composed of these items. Alternatively, if television addiction is not a general phenomenon but one specific to a subset of the population, a small but significantly greater than chance number of respondents will score 3 (often) or 4 (always) on 12 out of 18 of these items. The probability that any one subject will show this pattern of responses on these items is .02.

Therefore, of a total of 491 respondents (the obtained sample size), at least eleven will show this pattern if television addiction underlies their responses. This test will be referred to as the binomial analysis, since it is the binomial distribution which pairs each total score with its probability (assuming sampling from a stationary Bernoulli process).

Section A includes items assessing amount of television viewing, number of favorite shows, number of televisions available to watch, proportion of free time spent viewing, and amount of time spent viewing with others. Also, a question about video game ownership and use was included. It was hypothesized that, while television addicts may not watch more television in terms of number of hours due to constraints on their time (see Appendix A for an example), of the free time available to them, they may report spending all or most of it watching TV. In addition, they would be more likely to describe themselves as addicted to television in the item in which that response was an alternative. There were no clear expectations about relationships between television addiction and the other items in this section, but it was deemed important and interesting to discover if such relationships exist.

Section C contains an attitude scale in which half of the items (3, 4, 5, 8, 12, 13, 14) assessed positive attitudes and half (1, 2, 6, 7, 9, 10, 11) assessed negative attitudes. Respondents were asked to rate their agreement with these statements about television on a scale from 1 (strongly disagree) to 5 (strongly agree). A total attitude index was obtained for each respondent by subtracting the mean negative

item score from the mean positive item score, so that sign as well as magnitude of the index is informative. Space for comments is also provided. The second negative item (TV is addictive) is of particular interest. It was hypothesized that addicts would be more likely to agree or strongly agree with that statement, as well as have more generally negative attitudes toward television.

Basic demographic information was obtained from items in section D. These variables included age, sex, race, marital status, education, income, employment status, occupation, and household composition. There were no clear expectations here about the characteristics of television addicts since the popular literature did not single out any particular group as being more susceptible. And, the self-descriptions of television addicts seem to include males and females, single and married people, housewives and professionals, etc. There is the notion in the scientific literature that middle-class persons may be more susceptible due to the operation of a "middle-class taboo" against television viewing (Geiger and Sokol, 1959). Items in this section enable a test of that notion.

The role of stress in television addiction was assessed by the scale items in section E. These items and their weights were derived from a life events inventory developed by Cochrane and Robertson (1973). A total amount of life stress is calculated by adding the weights of the events which are checked as occurring in the past year for each respondent. It was hypothesized that television addicts' mean score on life stress would be higher than that of the rest of the

population if television addiction is, as it is claimed to be, a coping mechanism. Section E also includes items assessing happiness in the last three months, self-description of "sociability," and physical handicaps.

Section F includes a scale assessing frequency of various activities such as studying, reading, attending parties, going to concerts, etc. In addition, one of the items assessed frequency of playing video games, since the previous video game question assessed only home use. It was hypothesized that television addicts would be less active, in terms of engaging in fewer activities (except watching TV) less often than the rest of the population. An activity index was calculated for all respondents by adding the scores, ranging from 0 (never) to 4 (every day), for each item on this scale.

Finally, section G includes a values scale. Respondents were asked to rate the extent to which several kinds of goals were important to them personally, ranging from 1 (not important) to 5 (very important). There were no clear expectations about the relationship between values and television addiction, but a factor analysis revealed an interesting structure underlying the responses to these items. Six factors were obtained in a principal factors analysis with varimax rotation. The first factor consisted of items 3, 11, 13, 14, 17, and 19. This dimension represents goals which include being a good citizen, being useful, moral, having a secure income, peace of mind, and good friendships. The second factor consisted of items 6, 7, and 20. This dimension represents goals of being famous, popular, and making a lot of money. Factors 3 through 6 were minor factors, consisting of zero

to two items each (3- being creative, 4- having a happy marriage and raising a family, 5- making a contribution at work, 6- no items loaded over the criterion). It might be important to relate factor scores on the first dimensions to television addiction.

The back cover of the questionnaire included a request for further comments. Finally, a Spanish translation of the questionnaire was obtained and made available to all respondents with Hispanic surnames.

Survey Administration

Sample. The questionnaire was administered by mail in the spring of 1982 to a sample of 984 adults living in Springfield, Massachusetts. Names and addresses were drawn from the 1980 ward listings of the city. These list the eligible voters in each of the eight wards of Springfield. The lists are available to the public from the Election Commission of the city. Every 113th name in the listings was drawn. The sampling interval was chosen by estimating the number of names in the listings and dividing by 1000, to achieve a sample size of approximately 1000 adults. The total population of Springfield, according to the 1980 U.S. Census, is 152,319. With Chicopee and Holyoke, it forms a standard metropolitan statistical area (SMSA) by U.S. Census definition. It is the third largest city in the state and is primarily a manufacturing community.

Procedure. The use of a mail survey for obtaining a large sample of behavioral self-ratings is preferable for two reasons: (1) mail surveys are more economical than either telephone or face-to-face

interviews, and (2) social desirability responses are lowest in mail surveys (Dillman, 1978). The latter consideration is particularly important in this study.

Attention to administrative detail is crucial to the success of survey research. Often, the weakest link is the researcher's inability to mount and carry through a precisely ordered and timed implementation process (Dillman, 1978). Therefore, this study utilized three features of Dillman's "total design method": (1) professionally printed materials, (2) precisely timed follow-up letters, and (3) answering questions from respondents promptly and scrutinizing early returns for potentially correctable problems. According to Dillman, if these guidelines are adhered to, item nonresponse should be practically nonexistent and overall response rate should be 60-75%. The response rate for the present study was 65%.

The 984 residents selected from the ward listings received a letter explaining the purposes of the study and requesting their participation by filling out the questionnaire enclosed and returning it in the stamped envelope provided (see Appendix B, first letter). In addition, a request form written in Spanish for the Spanish language version of the questionnaire was included in the cover letter of those eighty residents chosen who had Spanish surnames. This initial package was mailed on March 15, 1982. One week later they received a postcard to thank those who had returned the questionnaire and remind those who had not to do so (see Appendix B, postcard). The postcard was mailed on March 22, 1982. Two weeks later (April 5, 1982), a second letter was sent to those who had not yet responded along with another copy of

the questionnaire (see Appendix B, second letter). Finally, seven weeks after the initial mailing, the remaining group of nonrespondents received a third letter and questionnaire by certified mail (see Appendix B, third letter). The results of this procedure in terms of response rate are described below.

Confidentiality of responses was guaranteed by assigning an identification number to each person in the sample. This number was written on the cover and first page of the questionnaire and stored in the computer file with the name and address of each person in the sample. When a questionnaire was returned, the name was removed from the mailing list for follow-up letters. This procedure is explained in the cover letters.

Ninety-five questionnaires were ultimately not received by the potential respondents for one of the following reasons, stamped on the envelope by the post office: deceased, moved and left no address, forwarding order expired, address not known, unclaimed, insufficient address, no such number, not deliverable. In cases in which the lack of delivery was due to problems with the address, the 1982 telephone book was consulted for a more complete or current address. In 34 cases, an address change was made and the questionnaire was remailed (and the follow-up procedure moved up in date for those subjects). The 95 questionnaires cited above do not include those which were eventually returned under these circumstances. The total number of potential respondents was thus 889. Of these 582 questionnaires were returned by the respondents, for a total response rate of 65%. Of these, 47 were returned without valid data. Three respondents said they did not have

a television and disqualified themselves, five had moved to another state, three claimed to have very poor vision so that they did not watch TV, and the remainder declined to participate for a variety of other reasons. This left 535 questionnaires which contained data. Of these 44 were eliminated. One was completed by an eleven-year-old, one was obviously completed at random, and the remainder were eliminated for missing data. The criteria for elimination due to missing data were failure to complete the scale asking for number of hours spent viewing television and/or failure to complete two or more of the other multi-item scales. A total of 491 questionnaires finally contributed data to the analyses.

Within three days of the initial mailing on March 15, 269 of the 984 were returned. The largest return for any single day was on March 18, when 150 questionnaires were received, 73 of which contributed to the analyses. The remainder were returned by the post office for reasons cited above. The second wave occurred three days after the postcard was mailed. On March 25, 59 questionnaires were received, 52 of which contributed data. Mail delivery at the University of Massachusetts was suspended April 6-7 due to a blizzard, so the returns from the second mailing were delayed. On April 12, 46 were returned, 33 of which contributed data. The last wave in returns occurred on May 11, six days after the certified mailing, when 44 questionnaires were received. The last questionnaire which contributed data was received June 28, 1982.

One respondent requested a Spanish language version of the questionnaire seven days after the second mailing, and a copy was sent. It

was never returned despite follow-up procedures. Approximately fifteen phone calls were received from respondents, all but one of which occurred within three days after the postcard was sent. Most called to say they had lost or discarded the questionnaire and requested another copy, which was mailed the day they called. One call concerned reluctance to answer the income question. It was suggested that the respondent answer all but that question and return the questionnaire, which she did.

Characteristics of the respondents. The average age of the respondents was 44.85 years with a range of 18 to 88 years. The percentage of males in the sample was 45.2% which compares favorably to the 1980 U.S. Census figure of 46% for the city of Springfield. The breakdown of race indicates that black and Hispanic people were underrepresented in this sample. The percentage of whites in this study was 88.8% whereas the Census figure for Springfield is 76%. In addition, 9.4% of the respondents were black (compared to 16.5% in all of Springfield) and 1.9% were Hispanic (compared to the Census figure of 9.06%). Also, whereas the majority of the respondents in this study were married (63%), 47.7% of the people 15 and over are married according to the Census data. These figures are not directly comparable, however, due to the fact that this sample included only those 18 and over. Census data for 1980 is not yet available for comparison with the remainder of the demographic information reported below.

The majority of the respondents were employed, 54.4% of them full-time. The unemployed made up 15.2% of the respondents and 19.9%

were retired. The largest single category reported for "your own job" (besides "other") was clerical (14.7%). The second largest was housewife (12.2%). The chief wage earner's job was most often reported as skilled manual (15.7%), followed by other manual (15.2%). The modal household income was in the \$20,000-24,999 range (15.3%). This question has the highest rate of nonresponse (16%). The modal educational level was high school (50.1%). Small households were probably over-represented, since the modal number of children in the household was 0 (61.7%) and the modal number of adults was 2 (50.7%).

CHAPTER III

RESULTS

The results of the survey will be presented in three parts. Presentation and discussion will be focused on the variables which were designed to test the addiction hypothesis. Other variables, such as activities and goals, will be discussed in the context of their relationship to the television addiction measures. Further analyses will test alternative conceptions of television addiction. The results presented below concern only the form of addiction hypothesized in the previous sections.

The first part of this section will present the results of the confirmatory factor analysis and subsequent factor analyses of the addiction item scale. The second part will present the results of the second analysis, which tested for the existence of a small but significant number of television addicts in the sample. In the third part, descriptive statistics on the television addiction measures will be presented, along with their correlations with other variables.

Confirmatory Factor Analyses

Due to the logical indeterminacy inherent in making inferences about the causal structure of variables from their correlational structure, it is generally recommended that those who want to use factor analysis begin with a theory (Comrey, 1978; Kim and Mueller, 1978).

The theory, based on prior theoretical or empirical knowledge, is used to guide expectations about the number and structure of factors derived from a correlation matrix. Such use of factor analysis is called "confirmatory." However, the informativeness, or degree of empirical confirmation afforded, varies from one factor analysis to another, even when guided by specific expectations (Kim and Mueller, 1978). There are several ways to assess the degree to which the plausibility of a given model is confirmed by the results of a factor analysis. Before presenting the results of the analyses conducted in this study, a brief discussion of the degree of informativeness of these analyses follows.

Of the several ways of assessing the degree to which data provide empirical evidence that a given model is appropriate, two will be presented below. This information is presented in Kim and Mueller (1978). In general, the greater the number of variables, the greater the number of conditions that the correlation matrix has to meet to satisfy the requirements of a particular factor model. Furthermore, the higher the ratio of the number of variables to the number of hypothesized factors, the greater the empirical confirmation, due to the greater number of structural constraints. Comrey (1978) recommends a minimum ratio of 5:1. The present study used a ratio of 27:1. (As an aside, the number of conditions to be met by a correlation matrix in order to fit a particular model is equivalent to the number of degrees of freedom associated with the significance test for the maximum likelihood solution. In the present study, $df = 298$ for the two-factor solution described in this part. Unfortunately, this number alone cannot be used as a measure of informativeness because it does not take

into account the degree of fit between a factor solution and the observed data.)

Another way of looking at the informativeness of a factor analysis is to consider the sampling adequacy of the data. That is, although most significance tests assume only the sampling of persons, some degree of psychometric sampling is also involved. The variables chosen can be considered as a subset of a potentially larger domain of relevant variables. The Kaiser-Meyer-Olkin index of sampling adequacy (Kaiser, 1970) yields an assessment of whether the variables belong together psychometrically and thus whether the correlation matrix is appropriate for factor analysis. The value of this index for the matrix in this study was .82, which rates between "meritorious" and "marvelous" on Kaiser's (1974) scale.

In conclusion, these indices indicate that the correlation matrix obtained in the present study is quite appropriate for factor analysis, and that the results will be very informative with regard to the plausibility of the proposed factor model.

The first issue to be addressed in describing the results of the survey is how well the proposed 18-item addiction factor accounted for the variance in the 27-item correlation matrix. It will become evident in describing the sequence of analyses that the one-factor model did fairly well in explaining the variance, but not as well as a two-factor solution.

Specifically, the proportion of variance accounted for by the hypothesized 18-item factor was 17.7%. The eigenvalue (that is, the length of this pre-defined vector) was 4.8. The program which

calculated this value was written specifically for this study and no tests are available to test the hypothesis that significant residual variance remains in the matrix after extraction of this factor. However, in subsequent analyses for which significance tests were available, it became apparent that, due to the large sample size, significance tests were not useful in evaluating the adequacy of the model. That is, given a sufficiently large sample size, any discrepancy between the model and observed data can be made significant. So, even though the two-factor model described below explained a good portion of the covariance and was quite interpretable, the chi-squares obtained were significant and remained so with an eight-factor solution. In sum, a significance test is probably not important in evaluating the adequacy of the hypothesized factor model. Other criteria, such as percent of variance accounted for, substantive importance, and interpretability will be employed.

In order to assess the adequacy of the hypothesized one-factor solution, eight more factor analyses were conducted. These analyses explored the consequences of two different methods of factor extraction, two methods of rotation, and two criteria for the number of factors to be extracted. The results are presented below.

Principal factors method with iterated communality estimates (PA2 in SPSS), quartimax rotation, and "eigenvalue > 1" criterion. This represents the most widely accepted factoring method and is recommended by Kim (1975) for most general purposes. The quartimax rotation was chosen because it maximizes the probability that a general factor will

be found.

The "eigenvalue > 1" criterion resulted in the extraction and rotation of eight factors. In characterizing the structure of these, and all subsequent factors, a rounded factor loading criterion of $\pm .50$ will be employed. The table of eigenvalues before rotation is presented in Table 1. It is evident that eight factors have eigenvalues greater than 1 and that cumulatively they account for 57.2% of the variance. The rotated factor matrix is presented in Table 2. The first factor is composed of seven items (1, 2, 3, 10, 16, 25, 27) all of which were hypothesized to be characteristic of television addicts-- "addict items." This factor accounted for 19.7% of the variance before rotation and 44.5% of the 8-factor variance. Examination of the content of these items indicates that respondents who score high on this dimension feel out of control of their viewing behavior, and feel depressed when they can't watch TV. The factor structure, with items in order of the size of their factor loading, is presented in Table 3.

The second factor is composed of four items all of which are addict items. This dimension represents feelings of anger, guilt, and depression after, during and about television viewing. This represents 9.7% of the variance before rotation above and beyond that accounted for by factor 1, and 19.2% of the eight-factor variance.

The remaining factors 3-8 are minor factors, in that less than three variables loaded significantly on each of them. In cases like this, it is usually recommended that the scree test (Cattell, 1965) be applied (Kim and Mueller, 1978; Gorsuch, 1974). The scree procedure provides a solution for deciding on the maximum number of non-trivial

TABLE 1

ESTIMATED COMMUNALITIES, EIGENVALUES, AND PROPORTION OF VARIANCE
FOR ADDICTION SCALE ITEMS, CALCULATED FROM THE
UNALTERED CORRELATION MATRIX

| Variable | Est. Communality | Factor | Eigenvalue | Pct. of Var. | Cum. Pct. |
|-----------|------------------|--------|------------|--------------|-----------|
| Addict 1 | .31392 | 1 | 5.31852 | 19.7 | 19.7 |
| Addict 2 | .27728 | 2 | 2.62147 | 9.7 | 29.4 |
| Addict 3 | .31469 | 3 | 1.51641 | 5.6 | 35.0 |
| Addict 4 | .34212 | 4 | 1.48037 | 5.5 | 40.5 |
| Addict 5 | .45641 | 5 | 1.22732 | 4.5 | 45.1 |
| Addict 6 | .16694 | 6 | 1.14888 | 4.3 | 49.3 |
| Addict 7 | .10817 | 7 | 1.13444 | 4.2 | 53.5 |
| Addict 8 | .30223 | 8 | 1.00789 | 3.7 | 57.2 |
| Addict 9 | .39942 | 9 | .94497 | 3.5 | 60.7 |
| Addict 10 | .27084 | 10 | .90960 | 3.4 | 64.1 |
| Addict 11 | .37077 | 11 | .88960 | 3.3 | 67.4 |
| Addict 12 | .16464 | 12 | .82630 | 3.1 | 70.5 |
| Addict 13 | .24564 | 13 | .78230 | 2.9 | 73.4 |

TABLE 1 (continued)

| Variable | Est. Communality | Factor | Eigenvalue | Pct. of Var. | Cum. Pct. |
|-----------|------------------|--------|------------|--------------|-----------|
| Addict 14 | .31036 | 14 | .74852 | 2.8 | 76.1 |
| Addict 15 | .41159 | 15 | .66069 | 2.4 | 78.6 |
| Addict 16 | .50973 | 16 | .62412 | 2.3 | 80.9 |
| Addict 17 | .32754 | 17 | .59890 | 2.2 | 83.1 |
| Addict 18 | .28418 | 18 | .56509 | 2.1 | 85.2 |
| Addict 19 | .15335 | 19 | .54501 | 2.0 | 87.2 |
| Addict 20 | .33615 | 20 | .53370 | 2.0 | 89.2 |
| Addict 21 | .23738 | 21 | .51997 | 1.9 | 91.1 |
| Addict 22 | .19851 | 22 | .48895 | 1.8 | 92.9 |
| Addict 23 | .26891 | 23 | .45977 | 1.7 | 94.6 |
| Addict 24 | .51439 | 24 | .42211 | 1.6 | 96.2 |
| Addict 25 | .48143 | 25 | .38371 | 1.4 | 97.6 |
| Addict 26 | .25605 | 26 | .35423 | 1.3 | 98.9 |
| Addict 27 | .40280 | 27 | .28715 | 1.1 | 100.0 |

TABLE 2

FACTOR MATRIX AFTER QUARTIMAX ROTATION FOR PRINCIPAL FACTORS SOLUTION

| | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 |
|-----------|---------------|---------------|-------------|---------------|-------------|---------------|-------------|-------------|
| Addict 1 | <u>.62443</u> | -.08286 | -.01685 | -.01106 | -.10816 | .15306 | -.08962 | -.08039 |
| Addict 2 | <u>.53537</u> | .10049 | .10385 | .01737 | -.00828 | -.11459 | -.15954 | -.13347 |
| Addict 3 | <u>.55670</u> | .07517 | -.03839 | .10078 | -.07516 | .08447 | .00930 | -.19427 |
| Addict 4 | .06713 | .41440 | .06682 | -.06098 | .10667 | <u>.58228</u> | -.00247 | .05295 |
| Addict 5 | .29690 | <u>.65242</u> | .02611 | -.03347 | .11169 | -.01581 | -.04189 | -.02277 |
| Addict 6 | -.04743 | -.04264 | .48715 | .07780 | .00974 | .02775 | -.05341 | -.13597 |
| Addict 7 | -.01707 | -.06894 | .28565 | -.00579 | .13299 | .03346 | .02170 | .14515 |
| Addict 8 | -.16829 | .22744 | .36274 | <u>.62209</u> | -.06755 | .03230 | -.05121 | .03301 |
| Addict 9 | .03277 | <u>.56018</u> | .06609 | .14403 | .03813 | .40685 | .01315 | -.09641 |
| Addict 10 | <u>.50937</u> | .06012 | .00872 | -.14635 | .04391 | .09436 | .00655 | .08908 |
| Addict 11 | .08517 | <u>.61431</u> | -.03084 | .10379 | -.02839 | .05981 | -.08006 | .13902 |
| Addict 12 | -.18528 | .01001 | .03125 | -.07552 | -.04400 | .00493 | -.02201 | .44291 |
| Addict 13 | .12740 | .41834 | .03512 | .02160 | .04291 | .14832 | .26919 | -.15295 |

TABLE 2 (continued)

| | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 |
|-----------|---------------|---------------|-------------|-------------|---------------|-------------|-------------|-------------|
| Addict 14 | .44844 | .24058 | -.00783 | .12135 | .05070 | -.12629 | .05782 | -.17687 |
| Addict 15 | .20894 | <u>.63245</u> | -.12010 | .00300 | .10375 | -.10834 | -.03371 | -.00899 |
| Addict 16 | <u>.55734</u> | .18524 | -.02003 | -.02977 | .43458 | -.08809 | .13850 | .08942 |
| Addict 17 | .42422 | .18122 | -.28490 | .09913 | .16606 | .06147 | .07032 | .17871 |
| Addict 18 | .35963 | .33789 | -.11424 | .06764 | .00133 | -.09490 | .08889 | .15067 |
| Addict 19 | -.11466 | .01278 | .16703 | -.34877 | -.06520 | .01531 | -.03149 | .05984 |
| Addict 20 | .26831 | .42630 | -.02692 | .09869 | -.08284 | -.00608 | .33974 | .02065 |
| Addict 21 | -.17849 | -.03691 | .48481 | -.22347 | -.18964 | -.06296 | .04050 | .24630 |
| Addict 22 | .16732 | .23360 | -.01438 | .05956 | .32657 | .14893 | .02362 | -.08209 |
| Addict 23 | -.41738 | .17928 | .27512 | .03573 | -.05395 | .04577 | .08426 | -.12205 |
| Addict 24 | .48333 | .20786 | .05612 | -.08154 | <u>.65400</u> | .01878 | -.00439 | -.06668 |
| Addict 25 | <u>.54369</u> | .25529 | .04635 | -.10483 | .12639 | -.06961 | .41750 | -.15262 |
| Addict 26 | .01697 | .29593 | .02021 | .46194 | -.05802 | -.00758 | .02617 | -.05484 |
| Addict 27 | <u>.50614</u> | .12507 | -.07479 | .08433 | .10791 | -.01353 | .45258 | .04456 |

TABLE 3

ITEMS LOADING ABOVE CRITERION FOR SOLUTION EMPLOYING
PRINCIPAL FACTORS WITH QUARTIMAX ROTATION

| Factor number | Eigenvalue after rotation | Item number | | Factor loading |
|------------------|---------------------------------|----------------|--|-------------------|
| 1 | 4.78 | 1 | When I come home from work, school, or shopping, I turn on the TV within five minutes. | .62 |
| | | 16 | I feel depressed when I can't watch TV. | .56 |
| | | 3 | I'll watch anything that's on TV. | .55 |
| | | 25 | When I'm watching TV, I feel like I can't stop. | .54 |
| | | 2 | When I'm watching TV at night, I go to bed later than I plan to. | .53 |
| | | 10 | I cancel other plans in order to watch TV. | .51 |
| | | 27 | I can't walk away from the TV once it is on. | .51 |
| | | 24 | I feel nervous when I can't watch TV. | .48 |
| | | 14 | I lose track of the time while I'm watching TV. | .45 |
| | | 17 | I can't think of anything to do on the weekends or holidays. | .42 |
| | | 23 | I'm too busy to watch TV. | -.42 |

TABLE 3 (continued)

| Factor number | Eigenvalue after rotation | Item number | Item content | Factor loading |
|---------------|---------------------------|-------------|--|----------------|
| 2 | 2.07 | 5 | I feel guilty about how much TV I watch. | .65 |
| | | 15 | I feel guilty when someone else sees me watching TV. | .63 |
| | | 11 | While I'm watching TV, I feel angry at myself for watching TV. | .61 |
| | | 9 | I feel depressed after watching TV. | .56 |
| | | ----- | | |
| | | 20 | I avoid watching TV because I might enjoy it, want to watch more, and do nothing else. | .43 |
| | | 13 | I have decided to give up TV for periods at a time. | .42 |
| 3 | .90 | 4 | I feel nervous after watching TV. | .41 |
| | | ----- | | |
| | | 6 | I go out socially at least two times a week. | .49 |
| 4 | .83 | 21 | It's easy for me to find ways to relax and have fun. | .48 |
| | | ----- | | |
| | | 8 | I forget to watch a TV show that I want to see. | .62 |
| 4 | .83 | ----- | | |
| | | 26 | After an evening of TV, I forget what I have watched. | .46 |

TABLE 3 (continued)

| Factor number | Eigenvalue after rotation | Item number | Item content | Factor loading |
|---------------|---------------------------|-------------|---|----------------|
| 5 | .63 | 24 | I feel nervous when I can't watch TV. | .65 |
| | | 16 | I feel depressed when I can't watch TV. | .43 |
| 6 | .58 | 4 | I feel nervous after watching TV. | .58 |
| | | 9 | I feel depressed after watching TV. | .41 |
| 7 | .53 | 27 | I can't walk away from the TV once it is on. | .45 |
| | | 25 | When I'm watching TV, I feel like I can't stop. | .42 |
| 8 | .43 | 12 | I watch only the programs that I like. | .44 |

factors. When the eigenvalues drop dramatically in size, additional factors add relatively little to the information already extracted. Examination of the eigenvalues in Table 3 clearly indicates that a two-factor solution is the most economical. Therefore, the same extraction and rotation methods were applied in an analysis which limited the number of factors extracted and rotated to two.

Principal factors method with iterated communality estimates (PA2 in SPSS), quartimax rotation, and number of factors limited to two. The results of this analysis are presented in Tables 4 and 5. Factor 1 includes seven variables, all addict items (3, 14, 16, 17, 24, 25, 27). This factor accounts for 70.9% of the two-factor variance. The variables are listed in order of their factor loading in Table 5. It is clear that the interpretation of factor 1 is fairly stable when the additional constraint of limiting the number of factors to two is imposed. Factor 2 accounts for the remaining 29.1% of the two-factor variance. It, too, can be interpreted in the same way in the two-factor as in the eight-factor solution.

The two-factor quartimax solution meets the criterion of simple structure very well. Eighteen of the 27 items loaded greater than $\pm .35$ on only one factor (1-4, 8-11, 13-14, 16-18, 23-27). Sixteen of these are addict items, so the recommendation to use relatively "pure" measures (that is, variables that measure only one factor in any substantial way) has been well met, also. Three variables load greater than $\pm .35$ on both. They are item 5 (I feel guilty about how much TV I watch), item 15 (I feel guilty when someone else sees me watching) and

TABLE 4
 FACTOR MATRIX AFTER QUARTIMAX ROTATION FOR PRINCIPAL
 FACTORS SOLUTION, WITH NUMBER OF FACTORS
 LIMITED TO TWO

| | Factor 1 | Factor 2 |
|-----------|---------------|---------------|
| Addict 1 | .49292 | -.15254 |
| Addict 2 | .46681 | -.02296 |
| Addict 3 | <u>.50811</u> | .01188 |
| Addict 4 | .14739 | .44505 |
| Addict 5 | .43665 | <u>.51305</u> |
| Addict 6 | -.13644 | .06807 |
| Addict 7 | -.05420 | -.00638 |
| Addict 8 | -.19204 | .40552 |
| Addict 9 | .13852 | .64360 |
| Addict 10 | .48397 | -.06021 |
| Addict 11 | .18576 | <u>.56060</u> |
| Addict 12 | -.20277 | .01317 |
| Addict 13 | .03912 | .44660 |
| Addict 14 | <u>.49598</u> | .14098 |
| Addict 15 | .37771 | .47041 |
| Addict 16 | <u>.67705</u> | .04769 |
| Addict 17 | <u>.50903</u> | .08881 |
| Addict 18 | .42785 | .21563 |
| Addict 19 | -.14123 | -.04140 |
| Addict 20 | .36241 | .37048 |

TABLE 4 (continued)

| | Factor 1 | Factor 2 |
|-----------|---------------|----------|
| Addict 21 | -.28746 | -.01491 |
| Addict 22 | .29176 | .23706 |
| Addict 23 | -.38842 | .31151 |
| Addict 24 | <u>.61346</u> | .10264 |
| Addict 25 | <u>.63562</u> | .12182 |
| Addict 26 | .05238 | .38370 |
| Addict 27 | <u>.57340</u> | .06570 |

TABLE 5

ITEMS LOADING ABOVE CRITERION FOR SOLUTION EMPLOYING
PRINCIPAL FACTORS WITH QUARTIMAX ROTATION AND
NUMBER OF FACTORS LIMITED TO TWO

| Factor number | Eigenvalue after rotation | Item number | Item content | Factor loading |
|------------------|---------------------------------|----------------|--|-------------------|
| 1 | 4.64 | 16 | I feel depressed when I can't watch TV. | .68 |
| | | 25 | When I'm watching TV, I feel like I can't stop. | .64 |
| | | 24 | I feel nervous when I can't watch TV. | .61 |
| | | 27 | I can't walk away from the TV once it is on. | .57 |
| | | 17 | I can't think of anything to do on the weekends and holidays. | .51 |
| | | 3 | I'll watch anything that's on TV. | .51 |
| | | 14 | I lose track of the time while I'm watching TV. | .50 |
| | | ----- | | |
| | | 1 | When I come home from work, school, or shopping, I turn on the TV within five minutes. | .49 |
| | | 10 | I cancel other plans in order to watch TV. | .48 |
| | | 2 | When I'm watching TV at night, I go to bed later than I plan to. | .47 |
| | | 5 | I feel guilty about how much TV I watch. | .44 |
| | | 18 | I sneak peeks at the TV when no one is around. | .43 |

TABLE 5 (continued)

| Factor number | Eigenvalue after rotation | Item number | Item content | Factor loading |
|---------------|---------------------------|-------------|--|----------------|
| 2 | 1.91 | 9 | I feel depressed after watching TV. | .64 |
| | | 11 | While I'm watching TV, I feel angry at myself for watching TV. | .56 |
| | | 5 | I feel guilty about how much TV I watch. | .51 |
| | | 15 | I feel guilty when someone else sees me watching TV. | .47 |
| | | 13 | I have decided to give up TV for periods of time. | .45 |
| | | 4 | I feel nervous after watching TV. | .45 |
| | | 8 | I forget to watch a TV show that I want to see. | .41 |

item 20 (I avoid watching TV because I might enjoy it, want to watch more, and do nothing else). Ten items, all addict items, load greater than $\pm .50$ on one factor (3, 5, 9, 11, 14, 16, 17, 24, 25, 27) and all but one (item 5) loads less than $\pm .20$ on the other. The remaining items have low loadings on both factors and none are addict items (6, 7, 12, 19, 21, 22).

In sum, the results of a principal factors extraction method with quartimax rotation (which maximizes the probability of finding one general factor) suggest a two-factor model. Both factors are composed entirely of addict items. The first factor includes items which assess feelings of depression and nervousness when respondents cannot watch TV, and behavior which indicates a feeling of loss of control ("can't walk away," "can't stop," "watch anything"). This factor accounts for 70.9% of the two-factor variance. An independent dimension is represented by factor 2. The three items which loaded significantly on this factor assessed feelings of guilt, anger, and depression about, during and after viewing. These results suggest that negative affect may be independent of feelings of loss of control and indiscriminate viewing.

To explore the consequences for the factor structure of a different rotation method, the factors were subjected to a varimax rotation. With this method, any tendency toward a general factor is minimized.

Principal factors (PA2) with varimax rotation and "eigenvalue > 1" criterion. The results of this analysis are presented in Tables 6 and 7. The main difference between the results of this analysis and the previous one is that fewer items load significantly on the extracted factors. This is a consequence of the varimax procedure, which simplifies the complexity of each factor rather than each variable. However, the first two factors lend themselves to the same interpretation suggested above. When the number of factors extracted is limited to two, almost identical results are obtained (see Tables 8 and 9) as the quartimax rotation.

The factor structure appears to be quite stable with two rotational methods. The consequences of the maximum likelihood extraction method are presented below.

Jöreskog factor analysis (JFACTOR in SPSS) with maximum likelihood factor extraction, quartimax rotation and "eigenvalue > 1" criterion. In the maximum likelihood approach, the information provided by the sample correlation matrix is used to obtain the best estimates of the factor loadings needed to reproduce the population matrix. The important advantage of this method is that it provides a large sample significance test. However, as noted at the beginning of this section, the chi-squares for each of the analyses reported below were significant, indicating that even an eight-factor solution was not adequate statistically. This is a common problem with large samples (Kim and Mueller, 1978). Other criteria were adopted for selecting the number of significant factors. It will become evident below that there were

TABLE 6

FACTOR MATRIX AFTER VARIMAX ROTATION FOR PRINCIPAL FACTORS SOLUTION

| | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 |
|-----------|---------------|---------------|-------------|-------------|---------------|---------------|---------------|----------------|
| Addict 1 | <u>.64560</u> | -.02430 | .04878 | .09891 | .05509 | -.01972 | -.05734 | .10266 |
| Addict 2 | .49247 | .22638 | .13893 | .05510 | -.09497 | .03380 | .08014 | .17769 |
| Addict 3 | <u>.50647</u> | .08553 | .06371 | .19173 | .07647 | .10111 | -.07434 | .22707 |
| Addict 4 | .07470 | .14576 | .12940 | .02143 | <u>.69562</u> | -.02257 | .03598 | -.08907 |
| Addict 5 | .14272 | <u>.61212</u> | .21184 | .15737 | .24608 | .02835 | .01111 | .06646 |
| Addict 6 | .00851 | -.06616 | .00737 | -.07226 | .03085 | .09874 | <u>.48631</u> | .11278 |
| Addict 7 | -.01535 | -.08687 | .13481 | .00328 | .00504 | .00237 | .27684 | -.15614 |
| Addict 8 | -.12468 | .12037 | -.07839 | -.05313 | .12168 | <u>.66262</u> | .33624 | -.04483 |
| Addict 9 | -.00173 | .30810 | .05939 | .06434 | <u>.60659</u> | .19474 | .04060 | .07939 |
| Addict 10 | .45065 | .09404 | .17623 | .17579 | .07361 | -.14085 | -.02255 | -.06102 |
| Addict 11 | .02005 | <u>.54427</u> | .02694 | .05588 | .28852 | .16400 | -.04657 | -.11703 |
| Addict 12 | -.13454 | .02872 | -.07034 | -.05448 | -.01004 | -.06369 | .03288 | <u>-.45568</u> |
| Addict 13 | -.25155 | .20855 | .00734 | .24503 | .34652 | .04893 | -.03098 | .14948 |

TABLE 6 (continued)

| | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 |
|-----------|-------------|---------------|---------------|---------------|-------------|---------------|---------------|-------------|
| Addict 14 | .30439 | .27168 | .16846 | .24153 | -.02926 | .13753 | -.03084 | .23024 |
| Addict 15 | .04271 | <u>.61783</u> | .17856 | .14074 | .15421 | .05575 | -.12698 | .05968 |
| Addict 16 | .30728 | .20096 | <u>.56995</u> | .32414 | -.02781 | -.02382 | -.05844 | -.02338 |
| Addict 17 | .28719 | .16283 | .27256 | .22022 | .08374 | .09666 | -.32619 | -.13228 |
| Addict 18 | .22046 | .35830 | .11019 | .27091 | .02103 | .09286 | -.13945 | -.09856 |
| Addict 19 | -.06621 | .03803 | -.08696 | -.05725 | .03674 | -.33304 | .19099 | -.08056 |
| Addict 20 | .08797 | .32143 | -.00237 | <u>.47723</u> | .16921 | .12973 | -.04807 | .01860 |
| Addict 21 | -.09524 | .00444 | -.20652 | .01341 | -.05628 | -.19205 | <u>.50335</u> | -.27405 |
| Addict 22 | .04889 | .12203 | .36031 | .07141 | .23358 | .07152 | -.03696 | .09590 |
| Addict 23 | -.39174 | .05334 | -.15131 | -.03404 | .16792 | .06541 | .30024 | .08567 |
| Addict 24 | .24573 | .18027 | <u>.76079</u> | .13811 | .09548 | -.07216 | .02188 | .11657 |
| Addict 25 | .27535 | .20013 | .25485 | <u>.59595</u> | .05167 | -.09345 | .02355 | .21073 |
| Addict 26 | -.02642 | .21353 | -.03675 | .08189 | .10732 | <u>.48770</u> | -.00266 | .07103 |
| Addict 27 | .26588 | .05123 | .22625 | <u>.59901</u> | .02563 | .07766 | -.11430 | .00979 |

TABLE 7

ITEMS LOADING ABOVE CRITERION FOR SOLUTION EMPLOYING
PRINCIPAL FACTORS WITH VARIMAX ROTATION

| Factor number | Eigenvalue after rotation | Item number | Item content | Factor loading |
|------------------|---------------------------------|----------------|--|-------------------|
| 1 | 4.78 | 1 | When I come home from work, school, or shopping, I turn on the TV within five minutes. | .65 |
| | | 3 | I'll watch anything that's on TV. | .51 |
| | | 2 | When I'm watching TV at night, I go to bed later than I plan to. | .49 |
| | | 10 | I cancel other plans in order to watch TV. | .45 |
| 2 | 2.07 | 15 | I feel guilty when someone else sees me watching TV. | .62 |
| | | 5 | I feel guilty about how much TV I watch. | .61 |
| | | 11 | While I'm watching TV, I feel angry at myself for watching TV. | .54 |
| 3 | .90 | 24 | I feel nervous when I can't watch TV. | .76 |
| | | 16 | I feel depressed when I can't watch TV. | .57 |

TABLE 7 (continued)

| Factor number | Eigenvalue after rotation | Item number | Item content | Factor loading |
|---------------|---------------------------|-------------|---|----------------|
| 4 | .83 | 25 | When I'm watching TV, I feel like I can't stop. | .60 |
| | | 27 | I can't walk away from the TV once it is on. | .60 |
| | | 20 | I avoid watching TV because I might enjoy it, want to watch more and do nothing else. | .48 |
| 5 | .64 | 4 | I feel nervous after watching TV. | .70 |
| | | 9 | I feel depressed after watching TV. | .61 |
| 6 | .58 | 8 | I forget to watch a TV show that I want to see. | .66 |
| | | 26 | After an evening of TV, I forget what I have watched. | .49 |
| 7 | .53 | 21 | It's easy for me to find ways to relax and have fun. | .50 |
| | | 6 | I go out socially at least two times a week. | .49 |

TABLE 7 (continued)

| Factor number | Eigenvalue after rotation | Item number | Item content | Factor loading |
|------------------|---------------------------------|----------------|---|-------------------|
| 8 | | 12 | I watch only the programs that I like. | -.46 |

TABLE 8
 FACTOR MATRIX AFTER VARIMAX ROTATION FOR PRINCIPAL
 FACTORS SOLUTION, WITH NUMBER OF FACTORS
 EXTRACTED LIMITED TO TWO

| | Factor 1 | Factor 2 |
|-----------|---------------|---------------|
| Addict 1 | <u>.50925</u> | -.08306 |
| Addict 2 | .46551 | .04168 |
| Addict 3 | <u>.50161</u> | .08189 |
| Addict 4 | .08457 | .46113 |
| Addict 5 | .36167 | <u>.56840</u> |
| Addict 6 | -.14453 | .04859 |
| Addict 7 | -.05280 | -.01380 |
| Addict 8 | -.24617 | .37514 |
| Addict 9 | .04838 | <u>.65656</u> |
| Addict 10 | .48765 | .00716 |
| Addict 11 | .10662 | <u>.58087</u> |
| Addict 12 | -.20264 | -.01494 |
| Addict 13 | -.02288 | .44773 |
| Addict 14 | .47178 | .20807 |
| Addict 15 | .30918 | <u>.51804</u> |
| Addict 16 | <u>.66399</u> | .14066 |
| Addict 17 | .49190 | .15821 |
| Addict 18 | .39400 | .27261 |
| Addict 19 | -.13417 | -.06049 |
| Addict 20 | .30782 | .41694 |

TABLE 8 (continued)

| | Factor 1 | Factor 2 |
|-----------|---------------|----------|
| Addict 21 | -.28265 | -.05444 |
| Addict 22 | .25625 | .27505 |
| Addict 23 | -.42769 | .25493 |
| Addict 24 | <u>.59343</u> | .18631 |
| Addict 25 | <u>.61272</u> | .20837 |
| Addict 26 | -.00107 | .38725 |
| Addict 27 | <u>.55885</u> | .14420 |

TABLE 9

ITEMS LOADING ABOVE CRITERION FOR SOLUTION EMPLOYING
PRINCIPAL FACTORS WITH VARIMAX ROTATION AND
NUMBER OF FACTORS LIMITED TO TWO

| Factor number | Eigenvalue after rotation | Item number | Item content | Factor loading |
|------------------|---------------------------------|----------------|--|-------------------|
| 1 | 4.64 | 16 | I feel depressed when I can't watch TV. | .66 |
| | | 25 | When I'm watching TV, I feel like I can't stop. | .61 |
| | | 24 | I feel nervous when I can't watch TV. | .59 |
| | | 27 | I can't walk away from the TV once it is on. | .56 |
| | | 1 | When I come home from work, school, or shopping, I turn on the TV within five minutes. | .51 |
| | | 3 | I'll watch anything that's on TV. | .50 |
| | | ----- | | |
| | | 17 | I can't think of anything to do on the weekends and holidays. | .49 |
| | | 10 | I cancel other plans in order to watch TV. | .49 |
| | | 14 | I lose track of the time while I'm watching TV. | .47 |
| | | 2 | When I'm watching TV at night, I go to bed later than I plan to. | .47 |
| | | 23 | I'm too busy to watch TV. | -.43 |

TABLE 9 (continued)

| Factor number | Eigenvalue after rotation | Item number | Item content | Factor loading |
|------------------|---------------------------------|----------------|--|-------------------|
| 2 | 1.91 | 9 | I feel depressed after watching TV. | .66 |
| | | 11 | While I'm watching TV, I feel angry at myself for watching TV. | .58 |
| | | 5 | I feel guilty about how much TV I watch. | .57 |
| | | 15 | I feel guilty when someone else sees me watching TV. | .52 |
| | | ----- | | |
| | | 4 | I feel nervous after watching TV. | .46 |
| | | 13 | I have decided to give up TV for periods of time. | .45 |
| | | 20 | I avoid watching TV because I enjoy it, want to watch more, and do nothing else. | .42 |

substantially no differences in the results and conclusions of the maximum likelihood analyses. It was deemed important to report them, though, since several authors (e.g., Gorsuch, 1974) recommend this extraction method when hypothesis-testing is the goal.

Tables 10 and 11 present the results of this analysis. Eight factors were extracted and rotated, and the first two lend themselves to the same interpretation. Factor 1 is composed of six addict items which are a subset of the items found in the first factor of the analogous principal factors solution. The second factor is composed of the same four addict items which were found in the principal factors solution. When the number of factors is limited to two (for the same reasons that were evident in the principal factors solution), the second factor is again identical in both the principal factors and maximum likelihood solutions when the number of factors is limited, and the items in factor are the same as the top five out of seven items in the principal factors solution (see Tables 12 and 13).

Tables 14 and 15 demonstrate that a varimax rotation with the number of factors limited to two in the maximum likelihood method confirms the stability of the two-factor model. The item correlation matrix is provided in Table 16 to enable the reader to further evaluate the adequacy of the proposed two-factor model.

In conclusion, the hypothesized one-factor model of television addiction was not supported by these data. A two-factor model is a better explanation for the pattern of item covariances in the addiction scale. Some attempt was made to characterize these factors; the discussion will be expanded in later sections.

TABLE 10

FACTOR MATRIX AFTER QUARTIMAX ROTATION FOR MAXIMUM LIKELIHOOD SOLUTION

| | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 |
|-----------|---------------|---------------|-------------|---------------|---------------|-------------|-------------|-------------|
| Addict 1 | <u>.61241</u> | -.05496 | -.00408 | .06512 | .00301 | -.01306 | -.04591 | -.01056 |
| Addict 2 | <u>.55830</u> | .11046 | -.01363 | -.05102 | .00257 | -.00741 | -.09434 | .13653 |
| Addict 3 | <u>.56038</u> | .09073 | -.02809 | .04167 | .10627 | -.10100 | .04346 | .04210 |
| Addict 4 | .05822 | .40535 | .05773 | <u>.90158</u> | -.00758 | .11827 | -.01315 | -.03011 |
| Addict 5 | .26842 | <u>.67152</u> | .09593 | .01377 | -.05389 | -.01442 | -.04786 | .07072 |
| Addict 6 | -.01819 | -.05651 | .02255 | .00322 | .14286 | .25023 | -.05850 | .39382 |
| Addict 7 | -.02163 | -.06483 | .07501 | .06979 | .04557 | .26140 | .02666 | .04011 |
| Addict 8 | -.15528 | .20740 | -.06177 | .01345 | <u>.59647</u> | .13714 | -.07904 | .23968 |
| Addict 9 | .02086 | <u>.53806</u> | .01613 | .28977 | .18758 | -.02393 | -.01611 | .10614 |
| Addict 10 | <u>.49503</u> | .09854 | .03795 | .07011 | -.15744 | .06219 | -.00532 | -.07651 |
| Addict 11 | .04613 | <u>.62082</u> | -.03070 | .02010 | .14245 | .06643 | -.10719 | -.14428 |
| Addict 12 | -.21127 | .01728 | -.08810 | .02230 | -.05844 | .21362 | -.07836 | -.23220 |
| Addict 13 | -.14990 | .42694 | -.01302 | .14951 | .00319 | -.10680 | -.21611 | .10578 |

TABLE 10 (continued)

| | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 |
|-----------|---------------|---------------|---------------|-------------|---------------|---------------|---------------|-------------|
| Addict 14 | .45883 | .27040 | .01115 | -.08687 | .06474 | -.12625 | .09103 | .14365 |
| Addict 15 | .17758 | <u>.62189</u> | .10134 | -.02426 | -.01254 | -.06107 | -.03701 | -.08367 |
| Addict 16 | <u>.49986</u> | .24501 | .38545 | -.08688 | -.04566 | .02351 | .14732 | -.14401 |
| Addict 17 | .37248 | .23453 | .15258 | -.00451 | .06344 | -.14881 | .05512 | -.34423 |
| Addict 18 | .31864 | .36981 | .02075 | -.11260 | .05836 | .01853 | .04915 | -.20053 |
| Addict 19 | -.12019 | .00208 | -.03244 | -.02212 | -.29266 | .25083 | -.06322 | .04986 |
| Addict 20 | .22377 | .47006 | -.10233 | -.05187 | .07260 | -.04696 | .28784 | -.01276 |
| Addict 21 | -.18396 | -.06419 | -.12633 | -.06083 | -.09087 | <u>.67633</u> | .00679 | .08120 |
| Addict 22 | .15258 | .26050 | .23023 | .09376 | .05111 | -.11011 | .04006 | .03372 |
| Addict 23 | -.42052 | .15423 | -.01926 | -.01930 | .09014 | .11732 | .01885 | .31299 |
| Addict 24 | .43300 | .24113 | <u>.85746</u> | .04467 | -.07673 | .02588 | .02661 | .03296 |
| Addict 25 | <u>.50597</u> | .30782 | .13693 | -.00902 | -.13571 | .00833 | .47059 | .10942 |
| Addict 26 | .00838 | .28481 | -.01001 | -.01507 | <u>.50538</u> | -.03716 | .03226 | .02201 |
| Addict 27 | .45427 | .17674 | .10223 | -.01675 | .09468 | .01625 | <u>.54520</u> | -.18921 |

TABLE 11
ITEMS LOADING ABOVE CRITERION FOR SOLUTION EMPLOYING
MAXIMUM LIKELIHOOD FACTOR ANALYSIS WITH
QUARTIMAX ROTATION

| Factor number | Item number | Item content | Factor loading |
|------------------|----------------|--|-------------------|
| 1 | 1 | When I come home from work, school, or shopping, I turn on the TV within five minutes. | .61 |
| | 3 | I'll watch anything that's on TV. | .56 |
| | 2 | When I'm watching TV at night, I go to bed later than I plan to. | .56 |
| | 25 | When I'm watching TV, I feel like I can't stop. | .51 |
| | 16 | I feel depressed when I can't watch TV. | .50 |
| | 10 | I cancel other plans in order to watch TV. | .50 |
| | 14 | I lose track of the time while I'm watching TV. | .46 |
| | 27 | I can't walk away from the TV once it is on. | .45 |
| | 24 | I feel nervous when I can't watch TV. | .43 |
| | 23 | I'm too busy to watch TV. | -.42 |
| 2 | 5 | I feel guilty about how much TV I watch. | .67 |
| | 15 | I feel guilty when someone else sees me watching TV. | .62 |
| | 11 | While I'm watching TV, I feel angry at myself for watching TV. | .62 |

TABLE 11 (continued)

| Factor number | Item number | Item content | Factor loading |
|---------------|-------------|--|----------------|
| 2 (cont.) | 9 | I feel depressed after watching TV. | .54 |
| | 20 | I avoid watching TV because I might enjoy it, want to watch more, and do nothing else. | .47 |
| | 13 | I have decided to give up TV for periods of time. | .43 |
| | 4 | I feel nervous after watching TV. | .41 |
| 3 | 24 | I feel nervous when I can't watch TV. | .86 |
| 4 | 4 | I feel nervous after watching TV. | .90 |
| 5 | 8 | I forget to watch a TV show that I want to see. | .60 |
| | 26 | After an evening of TV, I forget what I have watched. | .51 |
| 6 | 21 | It's easy for me to find ways to relax and have fun. | .68 |

TABLE 11 (continued)

| Factor number | Item number | Item content | Factor loading |
|---------------|---|---|----------------|
| 7 | 27 | I can't walk away from the TV once it is on. | .55 |
| | 25 | When I'm watching TV, I feel like I can't stop. | .47 |
| 8 | (no items had factor loadings over .40) | | |

TABLE 12

FACTOR MATRIX AFTER QUARTIMAX ROTATION FOR MAXIMUM
 LIKELIHOOD SOLUTION, WITH NUMBER OF FACTORS
 EXTRACTED LIMITED TO TWO

| | Factor 1 | Factor 2 |
|-----------|---------------|---------------|
| Addict 1 | .47636 | -.14598 |
| Addict 2 | .46092 | -.01906 |
| Addict 3 | .49402 | .00697 |
| Addict 4 | .14870 | .46186 |
| Addict 5 | .44234 | <u>.51735</u> |
| Addict 6 | -.12373 | .05886 |
| Addict 7 | -.04015 | -.01924 |
| Addict 8 | -.19079 | .39211 |
| Addict 9 | .13954 | <u>.63435</u> |
| Addict 10 | .48153 | -.05837 |
| Addict 11 | .18476 | <u>.57456</u> |
| Addict 12 | -.19814 | .02235 |
| Addict 13 | .04503 | .44273 |
| Addict 14 | .49491 | .13318 |
| Addict 15 | .38011 | .47731 |
| Addict 16 | <u>.69108</u> | .03360 |
| Addict 17 | <u>.50079</u> | .08678 |
| Addict 18 | .42940 | .21333 |
| Addict 19 | -.13407 | -.02952 |
| Addict 20 | .36693 | .36199 |

TABLE 12 (continued)

| | Factor 1 | Factor 2 |
|-----------|---------------|----------|
| Addict 21 | -.27115 | -.01724 |
| Addict 22 | .30139 | .23246 |
| Addict 23 | -.37580 | .30148 |
| Addict 24 | <u>.63478</u> | .09203 |
| Addict 25 | <u>.64383</u> | .10914 |
| Addict 26 | .04778 | .37814 |
| Addict 27 | <u>.58225</u> | .04582 |

TABLE 13

ITEMS LOADING ABOVE CRITERION FOR MAXIMUM LIKELIHOOD
FACTOR ANALYSIS WITH QUARTIMAX ROTATION AND
NUMBER OF FACTORS LIMITED TO TWO

| Factor number | Item number | Item content | Factor loading |
|------------------|----------------|--|-------------------|
| 1 | 16 | I feel depressed when I can't watch TV. | .69 |
| | 25 | When I'm watching TV, I feel like I can't stop. | .64 |
| | 24 | I feel nervous when I can't watch TV. | .63 |
| | 27 | I can't walk away from the TV once it is on. | .58 |
| | 17 | I can't think of anything to do on the weekends and holidays. | .50 |
| | ----- | | |
| | 14 | I lose track of the time when I'm watching TV. | .49 |
| | 3 | I'll watch anything that's on TV. | .49 |
| | 10 | I cancel other plans in order to watch TV. | .48 |
| | 1 | When I come home from work, school, or shopping, I turn on the TV within five minutes. | .48 |
| | 2 | When I'm watching TV at night, I go to bed later than I plan to. | .46 |
| | 5 | I feel guilty about how much TV I watch. | .44 |
| | 18 | I sneak peeks at the TV when no one is around. | .43 |

TABLE 13 (continued)

| Factor number | Item number | Item content | Factor loading |
|---------------|-------------|--|----------------|
| 2 | 9 | I feel depressed after watching TV. | .63 |
| | 11 | While I'm watching TV, I feel angry at myself for watching TV. | .57 |
| | 5 | I feel guilty about how much TV I watch. | .52 |
| | ----- | | |
| | 15 | I feel guilty when someone else sees me watching TV. | .48 |
| | 4 | I feel nervous after watching TV. | .46 |
| 13 | 13 | I have decided to give up TV for periods of time. | .44 |

TABLE 14
 FACTOR MATRIX AFTER VARIMAX ROTATION FOR MAXIMUM
 LIKELIHOOD SOLUTION WITH NUMBER OF FACTORS
 EXTRACTED LIMITED TO TWO

| | Factor 1 | Factor 2 |
|-----------|---------------|---------------|
| Addict 1 | .49257 | -.07489 |
| Addict 2 | .45877 | .04842 |
| Addict 3 | .48772 | .07899 |
| Addict 4 | .07970 | .47862 |
| Addict 5 | .36210 | <u>.57637</u> |
| Addict 6 | -.13099 | .04017 |
| Addict 7 | -.03691 | -.02490 |
| Addict 8 | -.24597 | .36007 |
| Addict 9 | .04547 | <u>.64792</u> |
| Addict 10 | .48489 | .01253 |
| Addict 11 | .09893 | <u>.59538</u> |
| Addict 12 | -.19928 | -.00680 |
| Addict 13 | -.02007 | .44457 |
| Addict 14 | .47018 | .20399 |
| Addict 15 | .30638 | <u>.52767</u> |
| Addict 16 | <u>.67878</u> | .13410 |
| Addict 17 | .48277 | .15894 |
| Addict 18 | .39366 | .27371 |
| Addict 19 | -.12832 | -.04877 |
| Addict 20 | .31017 | .41166 |

TABLE 14 (continued)

| | Factor 1 | Factor 2 |
|-----------|---------------|----------|
| Addict 21 | -.26573 | -.05663 |
| Addict 22 | .26424 | .27396 |
| Addict 23 | -.41578 | .24341 |
| Addict 24 | <u>.61455</u> | .18368 |
| Addict 25 | <u>.62101</u> | .20193 |
| Addict 26 | -.00792 | .38106 |
| Addict 27 | <u>.56933</u> | .13031 |

TABLE 15

ITEMS LOADING ABOVE CRITERION FOR MAXIMUM LIKELIHOOD
FACTOR ANALYSIS WITH VARIMAX ROTATION AND
NUMBER OF FACTORS LIMITED TO TWO

| Factor number | Item number | Item content | Factor loading |
|------------------|----------------|--|-------------------|
| 1 | 16 | I feel depressed when I can't watch TV. | .68 |
| | 25 | When I'm watching TV, I feel like I can't stop. | .62 |
| | 24 | I feel nervous when I can't watch TV. | .61 |
| | 27 | I can't walk away from the TV once it is on. | .57 |
| | 1 | When I come home from work, school, or shopping, I turn on the TV within five minutes. | .49 |
| | 3 | I'll watch anything that's on TV. | .49 |
| | 10 | I cancel other plans in order to watch TV. | .48 |
| | 17 | I can't think of anything to do on the weekends and holidays. | .48 |
| | 14 | I lose track of the time while I'm watching TV. | .47 |
| | 2 | When I'm watching TV at night, I go to bed later than I plan to. | .46 |
| 2 | 23 | I'm too busy to watch TV. | -.42 |
| | 9 | I feel depressed after watching TV. | .65 |
| | 11 | While I'm watching TV, I feel angry at myself for watching TV. | .60 |
| | 5 | I feel guilty about how much TV I watch. | .58 |

TABLE 15 (continued)

| Factor number | Item number | Item content | Factor loading |
|------------------|----------------|--|-------------------|
| 2 (cont.) | 15 | I feel guilty when someone else sees me watching TV. | .53 |
| | 4 | I feel nervous after watching TV. | .48 |
| | 13 | I have decided to give up TV for periods of time. | .44 |
| | 20 | I avoid watching TV because I might enjoy it, want to watch more, and do nothing else. | .41 |

TABLE 16
ADDICTION SCALE ITEM CORRELATION MATRIX

| | Addict 1 | Addict 2 | Addict 3 | Addict 4 | Addict 5 | Addict 6 | Addict 7 | Addict 8 | Addict 9 | Addict 10 | Addict 11 | Addict 12 | Addict 13 | Addict 14 |
|-----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|
| Addict 1 | 1.00000 | .29406 | .40802 | .07118 | .14967 | .01301 | -.08436 | -.11625 | .04287 | .29439 | -.00614 | .15155 | -.11126 | .21731 |
| Addict 2 | .29406 | 1.00000 | .29615 | .02676 | .24543 | .03896 | .04435 | -.01931 | .05100 | .29186 | .08576 | -.16089 | -.11361 | .34722 |
| Addict 3 | .40802 | .29615 | 1.00000 | .09076 | .13831 | -.00835 | -.06566 | -.01894 | .11604 | .24981 | .10885 | -.24039 | -.00324 | .26960 |
| Addict 4 | .07118 | .02676 | .09076 | 1.00000 | .30299 | -.00237 | .06876 | .08912 | .47426 | .14509 | .28320 | .04350 | .27971 | .03771 |
| Addict 5 | .14967 | .24543 | .13831 | .30299 | 1.00000 | -.00316 | -.03249 | .00943 | .35449 | .20717 | .44102 | -.01774 | .25098 | .33888 |
| Addict 6 | .01301 | .03896 | -.00835 | -.00237 | -.00316 | 1.00000 | .15706 | .21136 | .04408 | -.03242 | -.05019 | -.04026 | .00610 | -.04528 |
| Addict 7 | -.08436 | .04435 | -.06566 | .06876 | .03249 | .15706 | 1.00000 | .00981 | -.06737 | .02707 | -.02675 | .05073 | -.02510 | -.06607 |
| Addict 8 | -.11625 | -.01931 | -.01894 | .08912 | .08943 | .21136 | .00981 | 1.00000 | .23436 | .17112 | .17629 | .04407 | .10805 | .05590 |
| Addict 9 | .04287 | .05100 | .11604 | .47426 | .35449 | .04408 | -.06737 | .23426 | 1.00000 | .04968 | .36581 | -.04165 | .27828 | .14658 |
| Addict 10 | .29439 | .29186 | .24981 | .14509 | .20717 | -.03242 | .07707 | -.17112 | .04968 | 1.00000 | .06772 | -.03222 | -.01572 | .24648 |
| Addict 11 | -.00614 | .08576 | .10885 | .28320 | .44102 | -.05019 | -.07675 | .17629 | .36581 | .06772 | 1.00000 | .00342 | -.09543 | -.13950 |
| Addict 12 | -.15155 | -.16089 | -.24039 | .04350 | -.01774 | -.04026 | .05073 | .04407 | -.04165 | -.03222 | .00342 | 1.00000 | .09518 | .09518 |
| Addict 13 | -.11126 | -.11361 | -.00324 | .27971 | .25098 | .00610 | -.02510 | .10705 | .27828 | -.01572 | .17651 | .00342 | 1.00000 | .09518 |
| Addict 14 | .21731 | .34722 | .26960 | .03771 | .33888 | -.04528 | -.06507 | .05590 | .14658 | .24648 | .10737 | .09518 | .09518 | 1.00000 |
| Addict 15 | .04577 | .20022 | .18722 | .24230 | .29957 | -.07693 | .01298 | .03557 | .30102 | .32230 | .12181 | -.06527 | .24996 | .22641 |
| Addict 16 | .24743 | .26037 | .30632 | .07785 | .29957 | -.07693 | .01298 | .03557 | .30102 | .32230 | .12181 | -.06527 | .24996 | .22641 |
| Addict 17 | .21936 | .18217 | .21194 | .11304 | .24107 | -.20875 | -.02395 | -.09776 | .10935 | .30778 | .24094 | .05315 | .05024 | .22116 |
| Addict 18 | .20013 | .15970 | .25164 | .07526 | .29047 | -.07693 | .01298 | .03557 | .30102 | .32230 | .12181 | -.06527 | .24996 | .22641 |
| Addict 19 | -.06405 | -.05144 | -.07765 | .00322 | -.01799 | .00765 | -.01965 | -.14729 | -.01432 | -.02825 | .00903 | .06298 | -.05320 | -.09395 |
| Addict 20 | .11551 | .13397 | .20654 | .14137 | .33245 | -.02241 | -.03310 | .09112 | .27894 | .17716 | .25764 | .00046 | .23683 | .24296 |
| Addict 21 | -.10320 | -.11689 | -.17893 | -.02072 | .33245 | -.02241 | -.03310 | .09112 | .27894 | .17716 | .25764 | .00046 | .23683 | .24296 |
| Addict 22 | .07607 | .09824 | .13800 | .19731 | .21846 | -.02576 | .03749 | .05444 | .26196 | .09512 | .16259 | -.07756 | .11342 | .18400 |
| Addict 23 | -.28927 | -.17458 | -.17834 | .02300 | .03158 | .16568 | .07522 | .23848 | .16850 | -.17306 | .04279 | .02157 | .16935 | -.13896 |
| Addict 24 | -.24965 | .25578 | .23400 | .21502 | .36593 | .00467 | .04732 | -.10598 | .15345 | .28469 | .12740 | -.16198 | .03953 | .26809 |
| Addict 25 | .24545 | .29165 | .31229 | .14656 | .37411 | -.04398 | -.07635 | -.10241 | .12592 | .28855 | .13270 | -.17157 | .14020 | .38466 |
| Addict 26 | -.02659 | .04363 | .08739 | .09248 | .17344 | .07800 | -.06840 | .34900 | .24683 | -.07377 | .27607 | -.10719 | .11037 | .16951 |
| Addict 27 | .25946 | .21079 | .28287 | .08861 | .20319 | -.10508 | .02176 | -.08993 | .09896 | .21352 | .13411 | -.11235 | .09296 | .26717 |

TABLE 16 (continued)

| | Addict 15 | Addict 16 | Addict 17 | Addict 18 | Addict 19 | Addict 20 | Addict 21 | Addict 22 | Addict 23 | Addict 24 | Addict 25 | Addict 26 | Addict 27 |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Addict 1 | -.04577 | .24743 | .21936 | -.20013 | -.06405 | .11551 | -.10320 | -.07607 | -.28927 | .24965 | .24545 | -.02659 | .25946 |
| Addict 2 | .20022 | -.26037 | .18217 | .15970 | -.05144 | .13397 | -.11689 | .09824 | -.17458 | .25578 | .29165 | .04363 | .21079 |
| Addict 3 | .18722 | .30632 | .21194 | .25164 | -.07765 | .20654 | -.17893 | .13900 | -.17834 | .23400 | .31229 | .05739 | .28287 |
| Addict 4 | .24230 | .07785 | .11304 | -.07526 | .00322 | .14137 | -.02072 | .19731 | .02300 | .21502 | .14656 | .09248 | .08861 |
| Addict 5 | .46680 | .29957 | .24107 | .29047 | -.01799 | .33245 | -.12555 | .21846 | -.03158 | .36593 | .37411 | .17344 | .20319 |
| Addict 6 | -.08746 | -.03693 | -.20875 | -.12972 | .00765 | -.02241 | .18019 | -.02576 | .16568 | .00467 | -.04398 | .02800 | -.10508 |
| Addict 7 | -.05073 | .01298 | -.02395 | -.06843 | .01965 | -.03310 | .15626 | .03749 | .02522 | .04732 | -.02635 | -.06840 | .02176 |
| Addict 8 | .03557 | -.12764 | -.09276 | .05391 | -.14729 | .09112 | .07366 | .05444 | .23848 | -.10598 | -.10241 | .34900 | -.08993 |
| Addict 9 | .30102 | .12627 | .10935 | .16193 | -.01432 | .27894 | -.08111 | .26196 | .16850 | .15345 | .12592 | .24683 | .09896 |
| Addict 10 | .08874 | .32230 | .30778 | .19807 | -.02825 | .17776 | -.05530 | .09512 | -.17306 | .28469 | .29855 | -.07377 | .21352 |
| Addict 11 | .43142 | .12181 | .24094 | .20319 | .00903 | .25764 | -.01471 | .16259 | .04279 | .12740 | .13270 | .27607 | .13411 |
| Addict 12 | -.06071 | -.06527 | -.05315 | .00332 | .06298 | .00046 | .15520 | -.07756 | .02157 | -.16198 | -.17157 | -.10719 | -.11235 |
| Addict 13 | .24996 | .04702 | .05024 | .13041 | -.05120 | .23083 | -.05249 | .11342 | .16935 | .01953 | .14020 | .11337 | .09296 |
| Addict 14 | -.22641 | .32744 | .22116 | .21217 | -.09995 | .24296 | -.16863 | .18400 | -.13696 | .26809 | .38466 | .16351 | .26717 |
| Addict 15 | 1.00000 | .29472 | .17311 | .37299 | -.10879 | .31343 | -.11689 | .18605 | -.05930 | .30055 | .25874 | .16530 | .19805 |
| Addict 16 | .29472 | 1.00000 | .35832 | .33019 | -.07235 | .26631 | -.13634 | .28815 | -.24325 | .40540 | .40858 | .01705 | .41639 |
| Addict 17 | .17311 | .35832 | 1.00000 | .28561 | -.08593 | .24563 | -.25917 | .18590 | -.19739 | .32997 | .24716 | .12716 | .31837 |
| Addict 18 | .37299 | .33019 | .28661 | 1.00000 | -.07014 | .29099 | -.06528 | .12815 | -.12832 | .23059 | .26839 | .10109 | .25829 |
| Addict 19 | -.10879 | -.07235 | -.08693 | -.07034 | 1.00000 | -.06803 | .25516 | -.07172 | .15869 | -.05135 | -.06315 | -.15946 | -.11698 |
| Addict 20 | .31343 | .26631 | .24563 | .29099 | -.06803 | 1.00000 | -.12466 | .12494 | .05572 | .12034 | .37254 | .15234 | .32924 |
| Addict 21 | -.11689 | -.13634 | -.25917 | -.06528 | .25516 | -.12466 | 1.00000 | -.18205 | .17087 | -.17881 | -.09335 | -.05984 | -.11793 |
| Addict 22 | .18605 | .28815 | .18590 | .12815 | -.07172 | .12494 | .18205 | 1.00000 | .00865 | .32526 | .19652 | .04229 | .15697 |
| Addict 23 | -.05930 | -.24325 | -.19739 | -.12832 | .15869 | .05572 | .17087 | .00865 | 1.00000 | -.15495 | .15747 | .09510 | -.21396 |
| Addict 24 | .30855 | .60540 | .32997 | .23059 | -.05135 | .12034 | -.17881 | .32526 | -.15495 | 1.00000 | .43736 | .02525 | .32758 |
| Addict 25 | .25874 | .40858 | .24716 | .26839 | -.06315 | .37254 | -.09335 | .19652 | -.15747 | .43736 | 1.00000 | .03138 | .53382 |
| Addict 26 | .16530 | .01705 | .12016 | .10109 | -.15846 | .15234 | -.05984 | .04229 | .09510 | .02525 | .03138 | 1.00000 | .14196 |
| Addict 27 | .19805 | .41639 | .31837 | .25829 | -.11698 | .32924 | -.11793 | .15697 | -.21396 | .32758 | .53382 | .14196 | 1.00000 |

Binomial Analysis

This analysis tested for the existence of a small but significant number of respondents who scored above the criterion on the addict items and thus might be called television addicts. The probability is less than .02 that ten or more respondents will obtain a score of 3 or 4 on 12 or more of the 18 addict items if measurement error is the major source of item variance. The null hypothesis could not be rejected on the basis of the results. That is, none of the respondents scored at or above the criterion.

In sum, the binomial analysis did not lend support to the notion that there are a small but significant number of television addicts (as defined by the popular literature) in the population.

Descriptive Statistics

Measures were obtained on over 140 variables in this survey. Descriptive statistics on the demographic variables were presented in the Methods section. The presentation below will be focused on the variables which were constructed to measure television addiction.

Table 17 presents the response category frequencies and mean score for each item in the addiction scale. "Never" is the most frequent response for seventeen out of eighteen addict items. Item 2 (When I'm watching TV at night, I go to bed later than I plan to) was the only addict item for which the response distribution was only slightly positively skewed. This indicates that most respondents found this behavior completely atypical of them. On a scale of 0 (Never) to

TABLE 17
ADDICTION SCALE ITEM RESPONSE FREQUENCIES

| Item no. | Mean | s.d. | Missing cases | Frequencies | | | | |
|-------------|------|------|------------------|-------------|-------------|----------------|------------|-------------|
| | | | | 0 NEVER | 1 RARELY | 2 SOMETIMES | 3 OFTEN | 4 ALWAYS |
| A 1 | 1.41 | 1.35 | 13 | 177 | 84 | 111 | 58 | 43 |
| A 2 | 1.48 | 1.09 | 8 | 102 | 148 | 157 | 53 | 23 |
| A 3 | .66 | .85 | 16 | 253 | 151 | 56 | 10 | 5 |
| A 4 | .31 | .64 | 17 | 369 | 66 | 36 | 3 | 0 |
| A 5 | .48 | .86 | 16 | 344 | 53 | 64 | 11 | 0 |
| 6 | 2.26 | 1.31 | 16 | 58 | 80 | 125 | 104 | 108 |
| 7 | 3.15 | 1.15 | 18 | 27 | 20 | 62 | 110 | 254 |
| 8 | 1.84 | .93 | 16 | 51 | 85 | 238 | 90 | 11 |
| A 9 | .49 | .77 | 18 | 315 | 93 | 59 | 5 | 1 |
| A 10 | .42 | .75 | 10 | 343 | 86 | 41 | 10 | 1 |
| A 11 | .47 | .77 | 7 | 330 | 86 | 62 | 5 | 1 |
| 12 | 3.28 | .86 | 10 | 9 | 7 | 54 | 183 | 228 |

TABLE 17 (continued)

| Item no. | Mean | s.d. | Missing cases | Frequencies | | | | |
|-------------|------|------|------------------|-------------|-------------|----------------|------------|-------------|
| | | | | 0 NEVER | 1 RARELY | 2 SOMETIMES | 3 OFTEN | 4 ALWAYS |
| A 13 | .69 | 1.01 | 23 | 292 | 66 | 77 | 29 | 4 |
| A 14 | .92 | 1.03 | 11 | 218 | 129 | 97 | 25 | 11 |
| A 15 | .20 | .56 | 8 | 415 | 47 | 14 | 6 | 1 |
| A 16 | .26 | .64 | 11 | 398 | 47 | 29 | 4 | 2 |
| A 17 | .67 | .92 | 11 | 274 | 121 | 63 | 15 | 7 |
| A 18 | .21 | .64 | 12 | 422 | 30 | 17 | 6 | 4 |
| 19 | 2.90 | .96 | 30 | 15 | 11 | 113 | 187 | 135 |
| 20 | .47 | .83 | 21 | 332 | 70 | 56 | 8 | 4 |
| 21 | 2.91 | .99 | 13 | 12 | 24 | 111 | 179 | 152 |
| 22 | .23 | .56 | 16 | 395 | 57 | 20 | 2 | 1 |
| 23 | 1.95 | 1.00 | 13 | 59 | 56 | 234 | 110 | 19 |
| A 24 | .13 | .44 | 13 | 433 | 28 | 16 | 1 | 0 |

TABLE 17 (continued)

| Item no. | Mean | s.d. | Missing cases | Frequencies | | | | |
|-------------|------|------|------------------|-------------|-------------|----------------|------------|-------------|
| | | | | 0 NEVER | 1 RARELY | 2 SOMETIMES | 3 OFTEN | 4 ALWAYS |
| A 25 | .35 | .74 | 12 | 369 | 65 | 33 | 10 | 2 |
| A 26 | 1.11 | 1.02 | 11 | 176 | 120 | 143 | 36 | 5 |
| A 27 | .63 | .96 | 10 | 294 | 104 | 59 | 13 | 11 |

TOTADD = sum of scores on addition (A) items for each subject

TOTADD Mean = 10.77 sd = 7.15

MADD = average addition (A) item score for each subject

MADD Mean = .606 sd = .4

4 (Always), the mean score for each respondent's average on the addiction items was .61 with a standard deviation of .4. An index of each respondent's total score on the addiction items was also computed (TOTADD). Of a possible range of 0 to 72, the mean was 10.77 with a standard deviation of 7.15.

This does not reflect a response set, since all but two of the eight distributions of responses to the other items (6-8, 19-23) were either negatively skewed or approximately normally distributed. Of these items only items 20 (I avoid watching TV . . .) and 22 (I have fears of losing control or going crazy) were found to be atypical of most respondents.

In sum, the behavior and feelings which were hypothesized to be characteristic of television addicts were found to be rated as highly uncharacteristic of themselves by the large majority of the respondents. It is very unlikely that this reflects a response set, since seven of the nine items which were not deemed to be "addict items" were rated very differently by the respondents.

Two other item types provide information on television addiction. One of these asked respondents to choose between one of the following alternatives as a self description: (1) I avoid watching TV, (2) I watch TV very rarely, (3) I watch TV now and then, (4) I watch TV every day, and (5) I'm addicted to TV. Eleven respondents chose response 5, only one of which also scored above 36 on the TOTADD index. These eleven subjects viewed an average of 55.63 hours of television a week (the average amount for the entire sample of 491 respondents was 26.74) with a range of 34 to 90 hours. The average age of the

self-described addicts was 46 with a range of 26 to 82 years. Their average score on the sum of the addict items in the scale (TOTADD) was 26.18 with a range of 18 to 43 (compared to a mean of 10.77 for the entire sample). The standard deviation was 7.32, which is comparable to that of the entire sample. For the entire sample, the Pearson product moment correlation between TOTADD and the subject's response to this self-description item was .26 ($p < .001$). However, the correlation between response to this item and number of hours in television viewing was .49 ($p < .001$). Number of hours spent viewing television correlated only .25 ($p < .001$) with TOTADD.

In sum, there is a moderate but significant relationship between amount of television viewing and score on the 18 addict items, but a strong relationship between amount of viewing and tendency to call oneself a television addict. The relationship between score on the addict items and tendency to call oneself an addict is also moderate.

Using the two factors obtained from the principal factors solution with quartimax rotation, factor scores were computed for the respondents. Scores on factor 1 were positively correlated with both number of hours of television viewing per week ($r = .28$, $p < .001$) and proportion of free time spent viewing television ($r = .40$, $p < .001$) as well as several other variables. Discussion of the relationship between the factor scores and other variables is beyond the scope of the present paper, but it should be noted that the second correlation is higher than the first, indicating that proportion of free time spent viewing television may be a better indicator of excessive viewing than

number of hours. These two measures are related but not totally redundant, since the correlation between proportion of free time spent viewing and number of hours is only .45 ($p < .001$). Further analyses which test alternative conceptions of television addiction will also enable tests of the comparative ability of these two measures to predict television addiction.

Finally, three items on the attitude scale assessed attitudes about television which are relevant to addiction. Sixty-four percent of all respondents either agree or strongly agree that television is addictive. In addition, 53% either agree or strongly agree that television allows people to escape their problems. However, only 28% either agree or strongly agree that television makes people more passive. The most frequent response category for this attitude was "neither agree nor disagree."

To conclude, while most respondents agree that television is addictive, only eleven called themselves addicts and these were people who watched almost twice as much television as the average viewer. Most respondents found the behavior and feelings in the addict items to be very atypical of themselves, although self-described addicts scored higher on this scale.

CHAPTER IV

DISCUSSION

This paper began with the assertion that, despite widespread assumptions about the existence and nature of television addiction, no systematic study had been done to document its existence. The present study was the first attempt. Therefore, the important question to be answered at this point is: Does television addiction exist? The results argue against the existence of the television addiction syndrome as it is described in the popular literature. That evidence will be reviewed below. In addition, an attempt will be made to account for the anecdotal evidence in terms of both the nature of the viewing experience and the symbolic significance of video technology.

The results of both the binomial analysis and the factor analyses described in Chapter III failed to support the hypothesis that television addiction exists in the form hypothesized. That is, neither approach to the question of the existence of the syndrome--either as a general trait in the population or as a pattern characteristic of a small but significant group--yielded support for the hypothesis. In the binomial analysis, none of the 491 respondents scored at or above the criterion on the addict items. In order to be statistically significant, at least ten respondents should have shown this pattern. The factor analyses revealed that a two-factor model was better able to account for the item covariance than the hypothesized addiction factor.

These two factors were composed of items deemed characteristic of addicts, but they represent independent dimensions. The first factor, which accounted for most of the variance, represented feelings of loss of control over viewing behavior, absence of program selectivity, loss of a sense of time passing while viewing, withdrawal symptoms when unable to watch, and using television as a source of meaning and purpose. A second factor represented feelings of guilt about amount of viewing, anger for giving in to watching television, and depression after viewing. This suggests that negative affect may be independent of actual viewing behavior.

There are four possibilities as to how extremes on these independent dimensions may be expressed in the behavior of a single individual. One might score high on both of these dimensions, a pattern which would be characteristic of television addicts, according to the definition used in this study. If this pattern were a significant one, however, it would have become evident in the binomial analysis since both dimensions are composed of addict items. A second pattern would be that of low scores on both dimensions. This is probably the norm, given the shape of the response distributions to the addict items. A third pattern, high scores on factor 1 and low scores on factor 2, would indicate that there may be a subgroup which views a lot of television and derives a sense of structure and purpose from it, but does not feel guilty, angry, or depressed about their viewing habits. Whether or not these people might be television addicts is an empirical question. It would be important to examine their scores on the other variables thought to be related to addiction, such as feelings of

alienation from society and friends, amount of life stress, etc.

Finally, a fourth pattern is that of low scores on factor 1 and high scores on factor 2. For lack of a better term, this might be called a neurotic pattern, since it would indicate feelings of anger, guilt, and depression in the absence of excessive television viewing. This is the pattern about which least is known, except that perhaps it reflects a middle-class bias against television viewing such as that reported by Geiger and Sokol (1959).

Finally, the descriptive data on the responses to the addict items indicate that the majority find this behavior completely atypical of themselves. And yet, 65% believe that television is addictive and eleven respondents called themselves addicts. It was observed that, for these eleven respondents, the mean number of hours per week spent viewing was more than double the mean for the entire sample. However, all but one of these eleven score below 36 on the addict item scale. Television addiction exists as a popular concept and as a self-label for heavy viewers, but it was not possible to document its existence in this sample as a behavioral syndrome such as that described in the popular literature.

How does one then account for the anecdotal evidence? One possibility is that television addiction exists and this study failed to find it. In purely statistical terms, by perhaps falsely failing to reject the null hypothesis, a Type II error has been committed. The power of the test was in fact limited by the low variance in the responses to the addict items. It would be possible to increase the power of future tests by raising the alpha level but that would

increase the probability of a Type I error. It would be preferable to increase the sample size. This leads to the question of how important such a phenomenon is if, despite its robust and regular appearance in anecdote and magazine article, a systematic attempt to find addicts requires a very large sample. Contrast this with the results of the classic Midtown Manhattan study, in which 1660 residents were interviewed for symptoms of emotional impairment. The study revealed a startlingly high frequency (23.4%) of marked to severe symptom formation or incapacitation among the residents (Srole, Langner, Michael, Kirkpatrick, Opler, and Rennie, 1962). The present study found that although a small number of people called themselves addicts, by behavioral self-rating they did not show the classic symptoms as they are described in the literature. Television addiction does not appear to be a robust phenomenon.

However, the popularity of the notion of television as "plug-in drug" is enduring. One possible source of this image lies in the nature of the viewing experience. The only study to date which examines the nature of the viewing experience in adults (Csikszentmihalyi and Kubey, 1981) found that television watching, of all life activities measured in the course of one week, was experienced as the least challenging, involving the least amount of skill, and was most relaxing. The investigators found that, among 104 adults who filled out self-reports when signalled by a beeper, the typical viewing experience is characterized by low feelings of potency, moderate cheerfulness, and high relaxation. Affective states reported while reading were nearly identical, but television viewing was experienced as having fewer

cognitive requirements and involving lower feelings of potency. One source of the image of television as drug may lie in such perceived effects on mood and cognitive activity. The present study found that the majority of respondents agree that television helps people escape their problems. In this sense, television is perceived as having a sedative effect although few people were willing to believe that television actually makes people more passive.

The popular image of television as drug may also derive from a pervasive fear, or at least ambivalence, about technology and its effects. Despite the powerful impact of video technology on popular culture--language, symbols, myths, and metaphors--its symbolic significance is often ignored. There is a particular Adamsian sensibility that is lacking in the professional and popular discussions on the effects of television. This sensibility is illustrated in the work of two authors discussed below. Samuel Florman, author of Blaming Technology, discusses the myth of the technocratic elite in the context of engineering and its impact on society:

Although power, in the popular imagination, is identified with wealth and domination, there is another kind of power that lies beneath the surface of our petty ambitions, and that is the engineers' in full measure. It is the force that Henry Adams had in mind when he wrote of the dynamo and the Virgin. The power of the Virgin raised the medieval cathedrals, although, as Adams noted, the Virgin had been dead for a millenium and had held no real power even when she lived. For better or for worse, technology lies at the heart of our contemporary culture, and the technologist is akin to a priest who knows the secrets of the temple.
(Florman, 1981)

A more explicit link between the power of religious symbols and the power of television technology has been made by the contemporary theologian Harvey Cox, who writes of television as the "electronic

icon":

Technological artifacts become symbols when they are "iconized," when they release emotions incommensurate with their mere utility, when they arouse hopes and fears only indirectly related to their use, when they begin to provide foci for the mapping of cognitive experience. The dynamo becomes a symbol when it begins to incorporate the self-understanding of a people or of an epoch, when it is placed on view at an exposition, when, as Adams said, we begin "to pray to it." (Cox, 1973)

Cox believes that the mass media are distributing a "destructive and debasing form of religion." This is particularly dangerous, in his view, because "TV reaches us at a level of consciousness below the critically centered intelligence." Therefore, he believes, the mass media weaken the inner life of individuals and groups and increase their vulnerability to outside control. Finally, as theologian, his judgment is that the present technologies--because they violate the Biblical paradigm for communication of dialogue--are a menace not just to "religion" but the integrity of men and women.

This viewpoint informs not only the work of critics like Cox and Florman, but also the work of Jerome Singer, who has attempted to analyze the power of television as a medium within the framework of a "cognitive-affective" theory of psychology. The cautious wording of the statement below belies the extent to which such judgments underlie the reasoning in his theory:

As entertainment television works by appealing to the lowest common denominator of cognitive-affective systems, a value judgment may not be out of place here by suggesting that whereas our dominant visual mechanism and the escape from our thoughts are exploited by the medium, our potential for more extended reflection, for retention of information, and for careful, critical evaluation of information are minimized. (Singer, 1980)

The point is that such value judgments about the power of the medium and fears about its effects on consciousness may be contributing to the popular image of television as a drug. If this is so, it is useful to consider the notion of television addiction as a "second-order conviction." The distinction between first-order and second-order convictions was made in an article dealing with the state of scientific knowledge in clinical psychiatry entitled "Knowledge, conviction, and ignorance" (Benjamin, 1961). First-order convictions are those based on scientifically sound evidence but are yet to be tested directly. Second-order convictions are based on no or unsound evidence, but primarily on wishes, needs, or fears and often represent compliance with a subcultural value system. Benjamin suggests that when second-order convictions persist, there exists a need in the society for accepting them. Evaluation of this argument is beyond the scope of this paper, but his notion is useful for thinking about television addiction, considering the lack of evidence of its existence.

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APPENDIX A

Daily Hampshire Gazette, Northampton, Mass., Thurs., Nov. 6, 1980 11

GAZETTE TV listings

Television viewing addictive?

HAGERSTOWN, Md. (AP) — Michael Clark is hooked, but not on booze or drugs. His nemesis is the television set.

"My story is really a common one in America," says Clark, who asked that his real name not be used. "I believe the country has been taken over by the tube."

As Clark's wife and friends will readily say, the 31-year-old's passion for television is, to put it mildly, extraordinary. And Clark himself says he has known since childhood that his love for the screen — and anything on it — is not exactly normal.

"I am beginning to wonder if it was a genetic flaw, because I have never developed immunity to television," Clark says. "It is something in my personality or makeup that if a TV is on in a room I am attracted to it to the exclusion of anything or everyone else in the room."

He says he first became aware that his TV-watching was a problem one day when he was maybe 5 or 6 years old, and he couldn't bear to leave a cartoon show to heed the call of nature. He embarrassed himself by having an accident on the floor of a neighbor's home.

That incident, Clark recalls, "left a bad taste in my mouth. It damn near ruined my Saturday morning cartoon-watching."

As he grew older, Clark says, it was not unusual for him to spend five or six hours straight in front of the set, to the exclusion of mundane things like homework.

"I noticed in high school that I became very adept at thinking I had convinced my

parents that I had completed my homework so I could watch TV when in fact I never even brought my books home," he says.

As the years rolled by, and he enrolled in a Pennsylvania college, not only did the monkey remain on his back, but it began to get heavier.

In fact, Clark says, his addiction actually peaked in college.

"I became a campus personality almost because people knew I simply could not turn off the tube," he says. "When a major exam was coming up and I got anxious, my way of escape was to go sit in front of a TV set and not move."

"One time I pulled a 48-hour TV marathon, not leaving during the test patterns. I don't know how many times I watched the stations close with the flying jets and the 'Star Spangled Banner'."

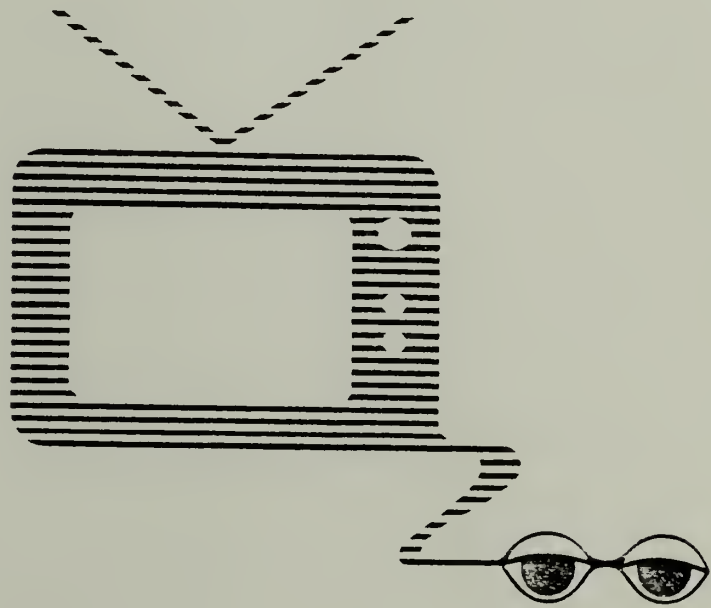
Clark is married now, and his wife has had to contend with his marathon television-watching. He says he still averages about 30 hours a week before the tube, and probably would watch longer if not for the fact that he works nights. By the time he gets home, the stations are off the air.

"It's an illness," says Clark's wife. "No joking, it is an illness."

A study by the A.C. Nielsen Co., the audience rating service, indicates that Clark's TV-viewing over the course of a week does not greatly exceed that of other men in his age group. But, as Clark points out, his viewing is curtailed by his job.

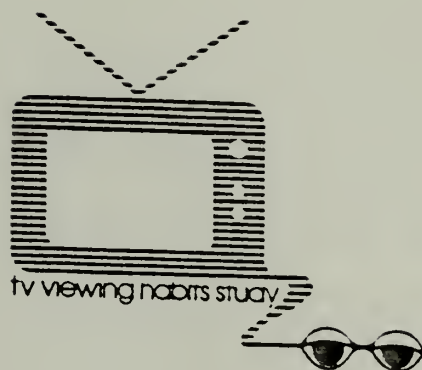
APPENDIX B

television viewing:
a study of the habits
and opinions of the citizens of
springfield, massachusetts



Return this questionnaire to:
Robin Smith
Department of Psychology, Tobin Hall
University of Massachusetts
Amherst, MA 01003

This material is based upon work supported by the
National Science Foundation under Grant No. BNS-8116876.



General Instructions

Most of the questions in this survey ask about your experiences with, and feelings about, television viewing. Please try to answer every question.

In almost all cases, the questions ask for you to circle the number next to the question. For example:

Your sex?

1 MALE

② FEMALE

In several places, we have left blank space in the questionnaire so that you may expand or elaborate on your answers, if you wish.

If you have any questions concerning the survey, please call me collect:

Robin Smith

Department of Psychology

University of Massachusetts

(413) 545-2069

When you have completed the questionnaire, please place it in the pre-addressed and stamped envelope that is included in this package and drop it in the mail. No additional postage is needed.

Thank you for your help!

A. Your TV viewing habits

How much of your free time do you spend watching TV?

- 1 ALL OF IT
- 2 MOST OF IT
- 3 SOME OF IT
- 4 VERY LITTLE OF IT
- 5 NONE OF IT

When you watch TV, how much of the time are you watching with others?

- 1 ALL OF THE TIME
- 2 MOST OF THE TIME
- 3 SOME OF THE TIME
- 4 VERY LITTLE OF THE TIME
- 5 NEVER

Are there any video game systems in your household such as those made by Atari, Intellivision, or another company?

- 1 NO
- 2 YES If yes, how many games? ____
 If yes, how often do you play them?
 - 1 EVERY DAY
 - 2 1-2 TIMES A WEEK
 - 3 1-2 TIMES A MONTH
 - 4 1-10 TIMES A YEAR
 - 5 NEVER

How would you describe yourself?

- 1 I AVOID WATCHING TV
- 2 I WATCH TV VERY RARELY
- 3 I WATCH TV NOW AND THEN
- 4 I WATCH TV EVERY DAY
- 5 I'M ADDICTED TO TV

How many televisions are available for you to watch at home?

- 0 NONE
- 1 ONE
- 2 TWO
- 3 THREE
- 4 FOUR OR MORE

How many hours do you watch TV during the following times?
(Please put O's in the time slots when you are not watching
TV and show the number of hours when you are watching.)

| | 6 a.m. to noon | noon to 6 p.m. | 6 p.m. to 2 a.m. |
|-----------|-------------------|-------------------|---------------------|
| Monday | _____ | _____ | _____ |
| Tuesday | _____ | _____ | _____ |
| Wednesday | _____ | _____ | _____ |
| Thursday | _____ | _____ | _____ |
| Friday | _____ | _____ | _____ |
| Saturday | _____ | _____ | _____ |
| Sunday | _____ | _____ | _____ |

Do you have favorite shows that you almost never miss?

- 1 YES If yes, how many? ____
2 NO

B. Your feelings about TV

Please show how much each statement describes your habits
or feelings in the last three months by circling one of the let-
ters next to each statement.

| | Never | Rarely | Sometimes | Often | Always |
|---|-------|--------|-----------|-------|--------|
| When I come home from work, school, or shopping, I turn on the TV within five minutes | N | R | S | O | A |
| When I'm watching TV at night, I go to bed later than I plan to | N | R | S | O | A |
| I'll watch anything that's on TV | N | R | S | O | A |
| I feel nervous after watching TV | N | R | S | O | A |
| I feel guilty about how much TV I watch | N | R | S | O | A |
| I go out socially at least two times a week | N | R | S | O | A |
| I spend at least an hour a day talking to the people I live with | N | R | S | O | A |
| I forget to watch a TV show that I want to see | N | R | S | O | A |
| I feel depressed after watching TV | N | R | S | O | A |
| I cancel other plans in order to watch TV | N | R | S | O | A |

Comments on your feelings about TV _____

What do you think about the information concerning the effects of television that is in magazine articles, books, and movies?

- 1 USUALLY TRUE
- 2 USUALLY NOT TRUE
- 3 I'M NOT SURE

Please show how much each statement describes your habits or feelings in the last three months by circling one of the letters next to each statement.

| | Never | Rarely | Sometimes | Often | Always |
|---|-------|--------|-----------|-------|--------|
| While I'm watching TV, I feel angry at myself for watching TV | N | R | S | O | A |
| I watch only the programs that I like | N | R | S | O | A |
| I have decided to give up TV for periods of time | N | R | S | O | A |
| I lose track of the time while I'm watching TV | N | R | S | O | A |
| I feel guilty when some else sees me watching TV | N | R | S | O | A |
| I feel depressed when I can't watch TV | N | R | S | O | A |
| I can't think of anything to do on the weekends and holidays | N | R | S | O | A |
| I sneak peeks at the TV when no one is around | N | R | S | O | A |
| Everything I do is for a purpose | N | R | S | O | A |
| I avoid watching TV because I might enjoy it, want to watch more, and do nothing else | N | R | S | O | A |
| It's easy for me to find ways to relax and have fun | N | R | S | O | A |
| I have fears of losing control or going crazy | N | R | S | O | A |
| I'm too busy to watch TV | N | R | S | O | A |
| I feel nervous when I can't watch TV | N | R | S | O | A |
| When I'm watching TV, I feel like I can't stop | N | R | S | O | A |
| After an evening of TV, I forget what I have watched | N | R | S | O | A |
| I can't walk away from the TV once it is on | N | R | S | O | A |

C. Your opinions about TV

Do you feel that TV:

| | Strongly Dis- agree | Dis- agree | Neither Agree Nor Dis- agree | Agree | Strongly Agree |
|--|---------------------------|---------------|---------------------------------------|-------|-------------------|
| Makes people more passive | 1 | 2 | 3 | 4 | 5 |
| Is addictive | 1 | 2 | 3 | 4 | 5 |
| Is entertaining | 1 | 2 | 3 | 4 | 5 |
| Offers quality programs | 1 | 2 | 3 | 4 | 5 |
| Is educational | 1 | 2 | 3 | 4 | 5 |
| Interferes with family rela- tionships | 1 | 2 | 3 | 4 | 5 |
| Keeps people from partic- ipating in community life | 1 | 2 | 3 | 4 | 5 |
| Is a good influence on children | 1 | 2 | 3 | 4 | 5 |
| Teaches children bad habits | 1 | 2 | 3 | 4 | 5 |
| Takes up too much of children's time | 1 | 2 | 3 | 4 | 5 |
| Is too violent | 1 | 2 | 3 | 4 | 5 |
| Keeps you company | 1 | 2 | 3 | 4 | 5 |
| Brings the family together | 1 | 2 | 3 | 4 | 5 |
| Allows people to escape their problems | 1 | 2 | 3 | 4 | 5 |

Comments _____

D. What your life is like

I am now

- 1 MARRIED
- 2 WIDOWED
- 3 SEPARATED
- 4 DIVORCED
- 5 NEVER MARRIED

How old are you? ____

Your sex?

- 1 MALE
- 2 FEMALE

How many children under the age of 18 live in your household?

- ☐ NONE
- 1 ONE
- 2 TWO
- 3 THREE
- 4 FOUR OR MORE

What are their ages? ____

How many adults (18 and older) live in your household, including yourself?

- 1 JUST ME
- 2 TWO
- 3 THREE
- 4 FOUR
- 5 FIVE OR MORE

What are their ages? ____

I am

- 1 BLACK
- 2 WHITE
- 3 HISPANIC
- 4 ASIAN

Are you employed at this time?

- 1 NO If no, are you
 - 1 UNEMPLOYED
 - 2 RETIRED
- 2 YES If yes, do you work
 - 1 FULL-TIME
 - 2 PART-TIME

What was your total family or household income last year?

- 1 UNDER \$5,000
- 2 \$5,000 to \$7,499
- 3 \$7,500 to \$9,999
- 4 \$10,000 to \$12,499
- 5 \$12,500 to \$14,999
- 6 \$15,000 to \$19,999
- 7 \$20,000 to \$24,999
- 8 \$25,000 to \$29,999
- 9 \$30,000 to \$39,999
- 10 \$40,000 or over

Which of the following best describes the kind of job you have or usually work at?

- 1 SKILLED MANUAL WORK (ELECTRICIAN, CARPENTER, ETC.)
- 2 OTHER MANUAL WORK (CAB DRIVER, MACHINE OPERATOR, MAINTENANCE, ETC.)
- 3 CLERICAL WORK (CLERK, SECRETARY, BOOKKEEPER, ETC.)
- 4 TECHNICAL WORK (COMPUTER PROGRAMMER, MEDICAL TECHNOLOGIST, ETC.)
- 5 FARM OWNER OR MANAGER
- 6 ARMED FORCES
- 7 ENGINEER
- 8 FARM LABORER
- 9 PROFESSIONAL (DOCTOR, LAWYER, DENTIST, CPA, ETC.)
- 10 HIGH SCHOOL OR ELEMENTARY SCHOOL TEACHER
- 11 OWNER OF BUSINESS OR INDUSTRIAL COMPANY
- 12 MIDDLE-LEVEL MANAGER AT A BUSINESS OR INDUSTRIAL COMPANY
- 13 TOP-LEVEL MANAGER AT A BUSINESS OR INDUSTRIAL COMPANY
- 14 SCIENTIFIC OCCUPATION (CHEMIST, PHYSICIST, ETC.)
- 15 SALES WORK
- 16 WAITER OR WAITRESS
- 17 LABORER IN AN INDUSTRY
- 18 HOUSEWIFE
- 19 OTHER _____

Which of the jobs listed above best describes the usual work of the chief wage-earner in your household?

____ (Please write the number)

Please show how many years of school you have.

- 1 ELEMENTARY
 - 2 HIGH SCHOOL
 - 3 COLLEGE 1-2 Years
 - 4 COLLEGE 3-4 YEARS
 - 5 GRADUATE SCHOOL
 - 6 OTHER _____
-

E. Recent events in your life.

Sometimes things happen to us that affect our TV viewing habits.

Here is a list of some good and bad things that sometimes happen to people. Which of these things has happened to you in the past year?

| | Yes | No |
|---|-----|-----------------------|
| Have you: | | |
| Married? | 1 | <input type="radio"/> |
| Received a raise, promotion, or award at work? | 1 | <input type="radio"/> |
| Won a prize or award at sports or some other leisure activity? | 1 | <input type="radio"/> |
| Been elected to public office? | 1 | <input type="radio"/> |
| Started a new job? | 1 | <input type="radio"/> |
| Had a "falling out" in a close personal relationship? | 1 | <input type="radio"/> |
| Had a serious problem with drugs or alcohol? | 1 | <input type="radio"/> |
| Served in the Armed Forces? | 1 | <input type="radio"/> |
| Had a son or daughter leave home? | 1 | <input type="radio"/> |
| Moved to a new neighborhood? | 1 | <input type="radio"/> |
| Been in trouble at work? | 1 | <input type="radio"/> |
| Retired? | 1 | <input type="radio"/> |
| Separated or divorced? | 1 | <input type="radio"/> |
| Changed your work hours? | 1 | <input type="radio"/> |
| Had behavior problems with your children? | 1 | <input type="radio"/> |
| Had an important religious or spiritual experience? | 1 | <input type="radio"/> |
| Gone into serious debt or bankruptcy? | 1 | <input type="radio"/> |
| Had an illness or injury which kept you in the hospital for more than a week? | 1 | <input type="radio"/> |
| Had a serious illness that kept you at home for more than two weeks? | 1 | <input type="radio"/> |
| Lost someone close to you through death? | 1 | <input type="radio"/> |
| Been unemployed for three months or more? | 1 | <input type="radio"/> |
| Bought a house? | 1 | <input type="radio"/> |

During the last three months, how happy have you been with yourself and with your ability to do the things that matter to you?

- 1 VERY HAPPY
- 2 PRETTY HAPPY
- 3 AVERAGE
- 4 NOT VERY HAPPY
- 5 MISERABLE

Do you have any physical handicaps that keep you from things that you would like to do?

- 1 YES

If yes, please list them below

- 2 NO

How would you describe yourself?

- 1 SOCIALLY OUTGOING
- 2 AVERAGE
- 3 SOCIALLY PASSIVE, WITHDRAWN

F. Your other activities

In the past year, how often have you done each of the following activities.

| | Every day | 1-2 times a week | 1-2 times a month | 1-10 times a year | Never |
|---|--------------|---------------------|----------------------|----------------------|-------|
| Study for 2-3 hours | D | W | M | Y | N |
| Participate in sports | D | W | M | Y | N |
| Go to a meeting outside of your job | D | W | M | Y | N |
| Go to the movies | D | W | M | Y | N |
| Read a newspaper | D | W | M | Y | N |
| Read a book | D | W | M | Y | N |
| Read a magazine | D | W | M | Y | N |
| Play a video game | D | W | M | Y | N |
| Watch TV | D | W | M | Y | N |
| Listen to music | D | W | M | Y | N |
| Meditate or do yoga | D | W | M | Y | N |
| Get into a serious political or philosophical discussion | D | W | M | Y | N |
| Help someone else with their personal problems | D | W | M | Y | N |
| Talk to a counselor, psychologist, psychiatrist or priest about your problems | D | W | M | Y | N |
| Talk to a close friend about your problems | D | W | M | Y | N |
| Tutor or do volunteer social work | D | W | M | Y | N |
| Attend religious services | D | W | M | Y | N |
| Attend parties | D | W | M | Y | N |
| Participate in demonstrations | D | W | M | Y | N |
| See a palm reader or psychic | D | W | M | Y | N |
| Go to an art museum or gallery | D | W | M | Y | N |
| Go to a concert | D | W | M | Y | N |

G. Your hopes for the future.

How important is each of the following goals to you personally?

| | Not Important | | | Very Important | |
|---|------------------|---|---|-------------------|---|
| Being free of responsibility | 1 | 2 | 3 | 4 | 5 |
| Having a successful career | 1 | 2 | 3 | 4 | 5 |
| Being a good citizen | 1 | 2 | 3 | 4 | 5 |
| Having a happy marriage | 1 | 2 | 3 | 4 | 5 |
| Raising a family | 1 | 2 | 3 | 4 | 5 |
| Being popular | 1 | 2 | 3 | 4 | 5 |
| Making a lot of money | 1 | 2 | 3 | 4 | 5 |
| Helping people with daily problems | 1 | 2 | 3 | 4 | 5 |
| Being creative | 1 | 2 | 3 | 4 | 5 |
| Being in good physical condition | 1 | 2 | 3 | 4 | 5 |
| Being useful to others and society | 1 | 2 | 3 | 4 | 5 |
| Understanding world events | 1 | 2 | 3 | 4 | 5 |
| Being a moral and ethical person | 1 | 2 | 3 | 4 | 5 |
| Having a secure income | 1 | 2 | 3 | 4 | 5 |
| Making a contribution at work | 1 | 2 | 3 | 4 | 5 |
| Enjoying art, music, drama | 1 | 2 | 3 | 4 | 5 |
| Building good friendships | 1 | 2 | 3 | 4 | 5 |
| Having lots of time for hob- bies and leisure activities | 1 | 2 | 3 | 4 | 5 |
| Having peace of mind | 1 | 2 | 3 | 4 | 5 |
| Being famous | 1 | 2 | 3 | 4 | 5 |
| Being unconventional | 1 | 2 | 3 | 4 | 5 |

Thank You For Your Help!

Is there anything else you would like to tell us about your television viewing habits? If so, please use this space for that purpose.

Also, any comments you wish to make that you think may help us in future efforts to understand how Springfield residents feel about television viewing will be appreciated, either here or in a separate letter.

Your contribution to this effort is very greatly appreciated. If you would like a summary of the results, please print your name and address on the back of the return envelope. We will see that you get it

Text of the First Letter

Dear (name),

Recently there has been much discussion about the changing television viewing habits of the American public. With the introduction of new technologies, such as cable T.V. and video games, it becomes important to get new and more accurate information on how American citizens feel about television and its role in their lives.

You are one of a number of people who are being asked to give their opinion in this matter. Your name was drawn in a random sample of the entire city of Springfield. In order that the results truly represent the thinking of the people of Springfield, it is important that each questionnaire be completed and returned.

You may be assured of complete confidentiality. The questionnaire has an identification number stamped on it so that we may check your name off the mailing list when your questionnaire is returned. Your name will not be placed on the questionnaire itself.

You may receive a summary of the results of this study by writing "copy of results" on the back of the return envelope and printing your name and address below it.

I would be very happy to answer any questions you may have about this study. Please feel free to write or call me collect at (413) 545-2069.

Thank you for your assistance.

Sincerely yours,

Robin Smith
Project Director

Request for Spanish Language Version

Si usted prefiere una copia de este cuestionario en español, favor de indicarlo en la caja abajo y devolver esta carta en el sobre incluido. Gracias

☐ Favor de enviarme una copia del cuestionario en español

Text of the Postcard

Last week a questionnaire seeking your opinion about television viewing habits of the American public was mailed to you. Your name was drawn in a random sample of people in Springfield.

If you have already completed and returned it to us, please accept our sincere thanks. If not, please do so today. Because it has been sent to only a small, but representative, sample of Springfield residents it is extremely important that yours also be included in the study if the results are to accurately represent the opinions of Springfield residents.

If by some chance you did not receive the questionnaire, or it got misplaced, please call me collect (413-545-2069) and I will get another one in the mail to you today.

Sincerely yours,

Robin Smith
Project Director

Text of the Second Letter

Dear (name),

About three weeks ago I wrote to you seeking your opinion on television viewing habits. As of today we have not yet received your completed questionnaire.

We have undertaken this study because of the belief that many books and magazine articles written about television viewing habits may not accurately reflect the true behavior of most people.

I am writing to you again because of the significance each questionnaire has to the usefulness of this study. Your name was drawn through a random sampling process in which every person in Springfield had an equal chance of being selected. This means that only about one out of every 165 people in Springfield are being asked to complete this questionnaire. In order for the results of the study to be truly representative of the opinions of all Springfield residents it is essential that each person in the sample return their questionnaire.

In the event that your questionnaire has been misplaced, a replacement is enclosed.

Your cooperation is greatly appreciated.

Sincerely yours,

Robin Smith
Project Director

Text of the Third Letter

Dear (name),

I am writing to you about our study of television habits. We have not yet received your completed questionnaire.

The large number of questionnaires returned is very encouraging. But whether we will be able to describe accurately how the people of Springfield feel on these issues depends upon you and the others who have not yet responded. This is because past experiences suggest that those of you who have not sent in your questionnaire may hold quite different opinions than those who have.

This is the first study of this type that has ever been done. Therefore the results are of particular importance to many psychologists, journalists, and citizens who are worried about the impact that television is making on the lives of Americans. The usefulness of our results depends on how accurately we are able to describe how the people of Springfield feel.

It is for these reasons that I am sending this by certified mail to insure delivery. In case our other correspondence did not reach you, a replacement questionnaire is enclosed. May I urge you to complete and return it as quickly as possible.

I'll be happy to send you a copy of the results if you want one. Simply put your name, address, and "copy of results" on the back of the return envelope. We expect to have them ready to send in several months.

Your contribution to the success of this study will be appreciated greatly.

Sincerely yours,

Robin Smith
Project Director

